Natural Resources Conservation Service

Idaho Water Supply Outlook Report

April 1, 2014

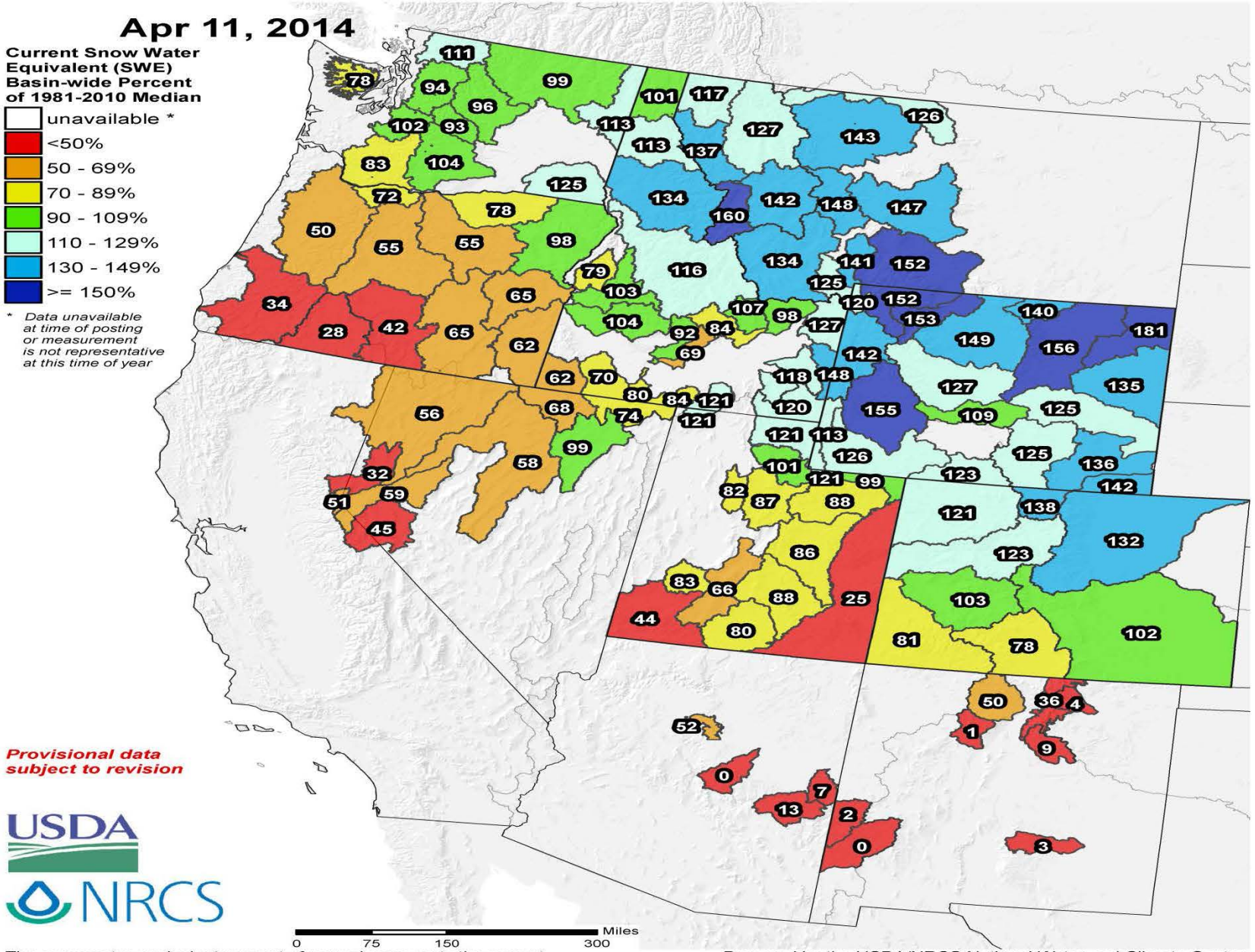
NRCS Hydrologist Karl Wetlaufer needs all six sections (180 inches) of the standard Federal Snow Sampler to measure the deep snow and verify the electronic data at the Cool Creek SNOTEL site in the

April 11, 2014

IDWR State Water Supply Meeting

Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Apr 11, 2014



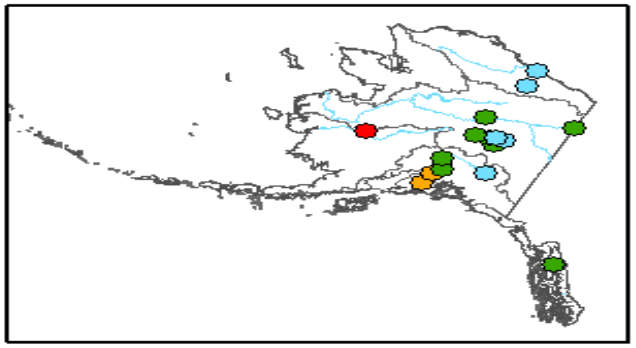
Provisional data subject to revision

USDA NRCS

The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

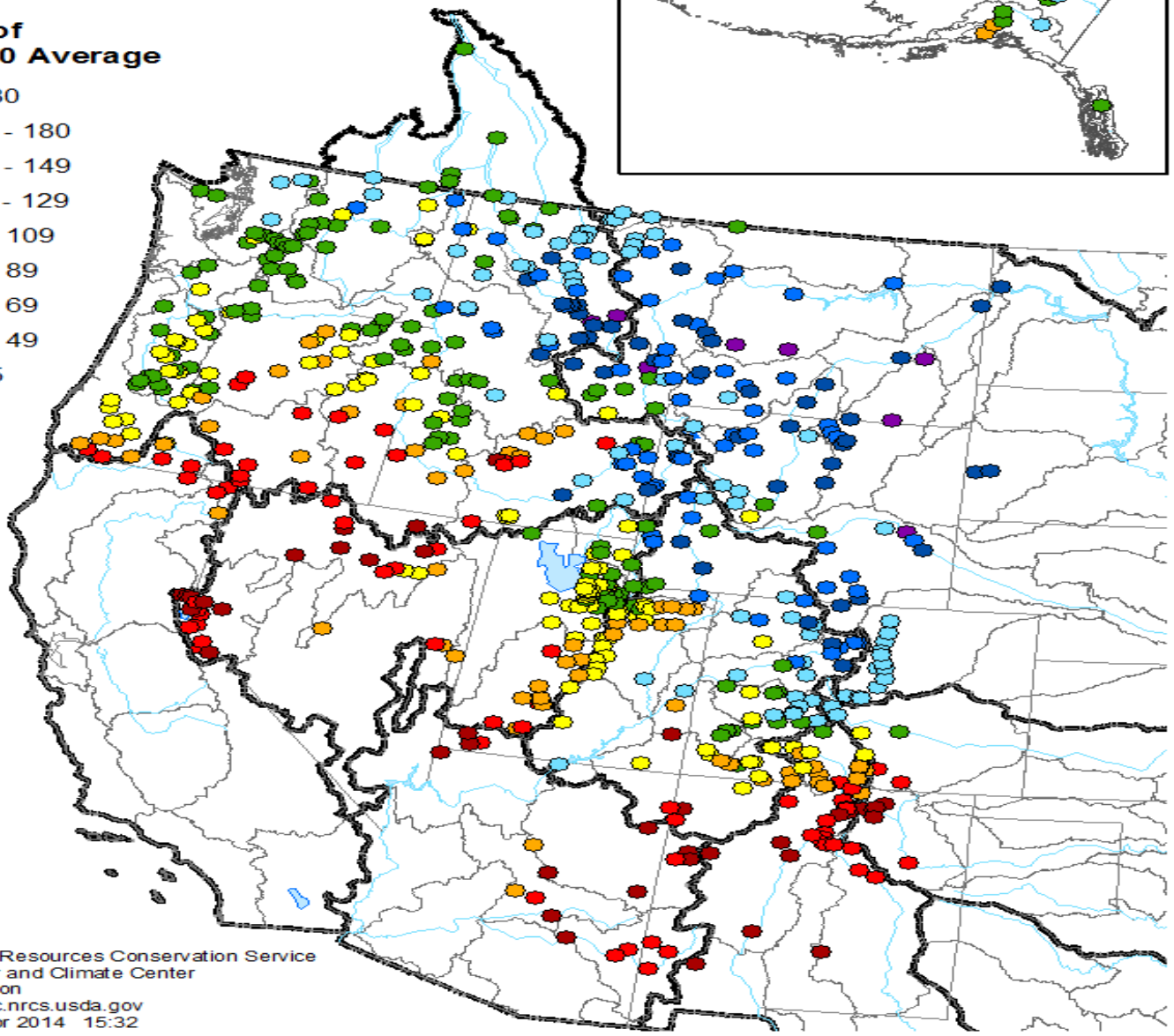
Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon http://www.wcc.nrcs.usda.gov/gis/
Based on data from http://www.wcc.nrcs.usda.gov/reports/
Science contact: Jim.Marron@por.usda.gov 503 414 3047

Spring and Summer Streamflow Forecasts as of April 1, 2014



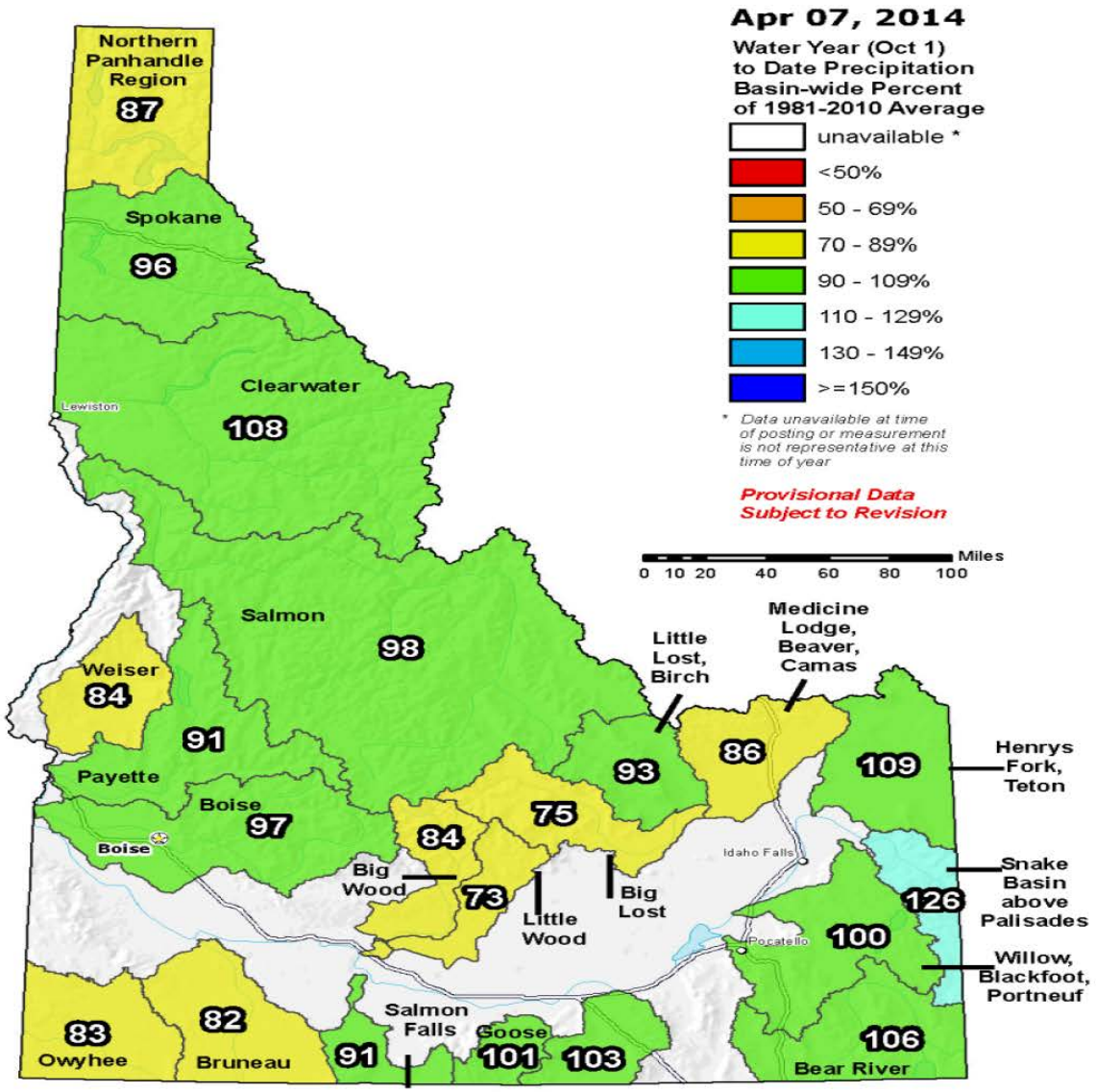
Percent of 1981-2010 Average

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25



Prepared by:
USDA Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov
Created: 7 Apr 2014 15:32

Idaho SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

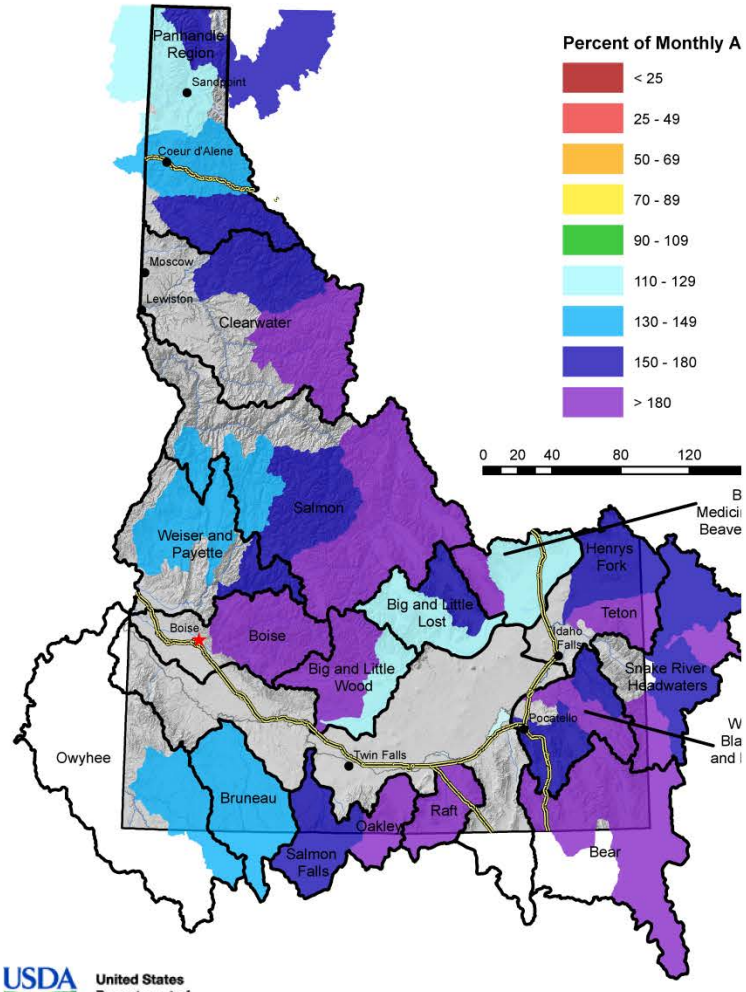


USDA NRCS

The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon http://www.wcc.nrcs.usda.gov/gis/
Based on data from http://www.wcc.nrcs.usda.gov/reports/
Science contact: Jim.Marron@por.usda.gov 503 414 3047

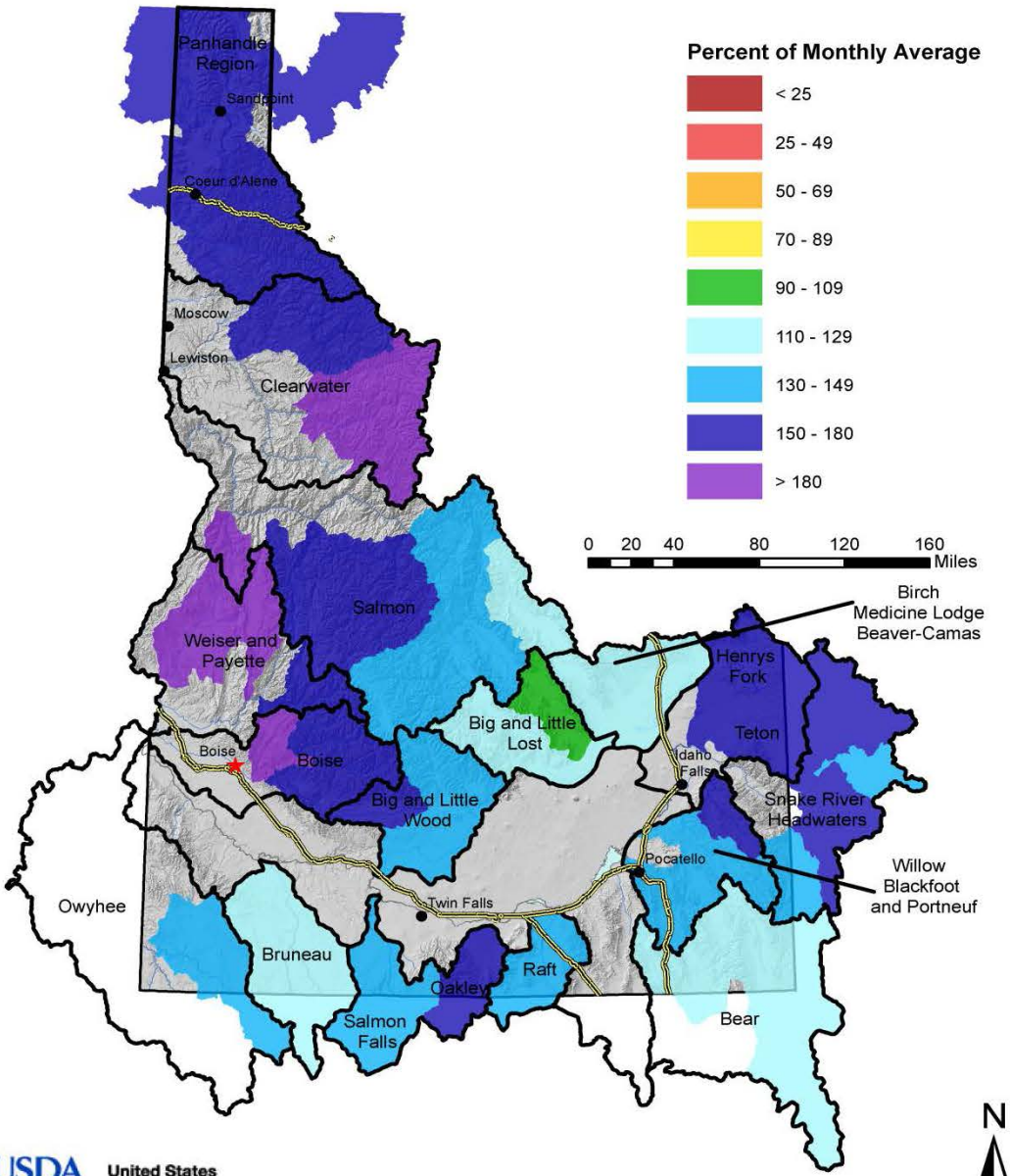
Percent of Average Monthly Precipitation
February 2014



USDA United States Department of Agriculture

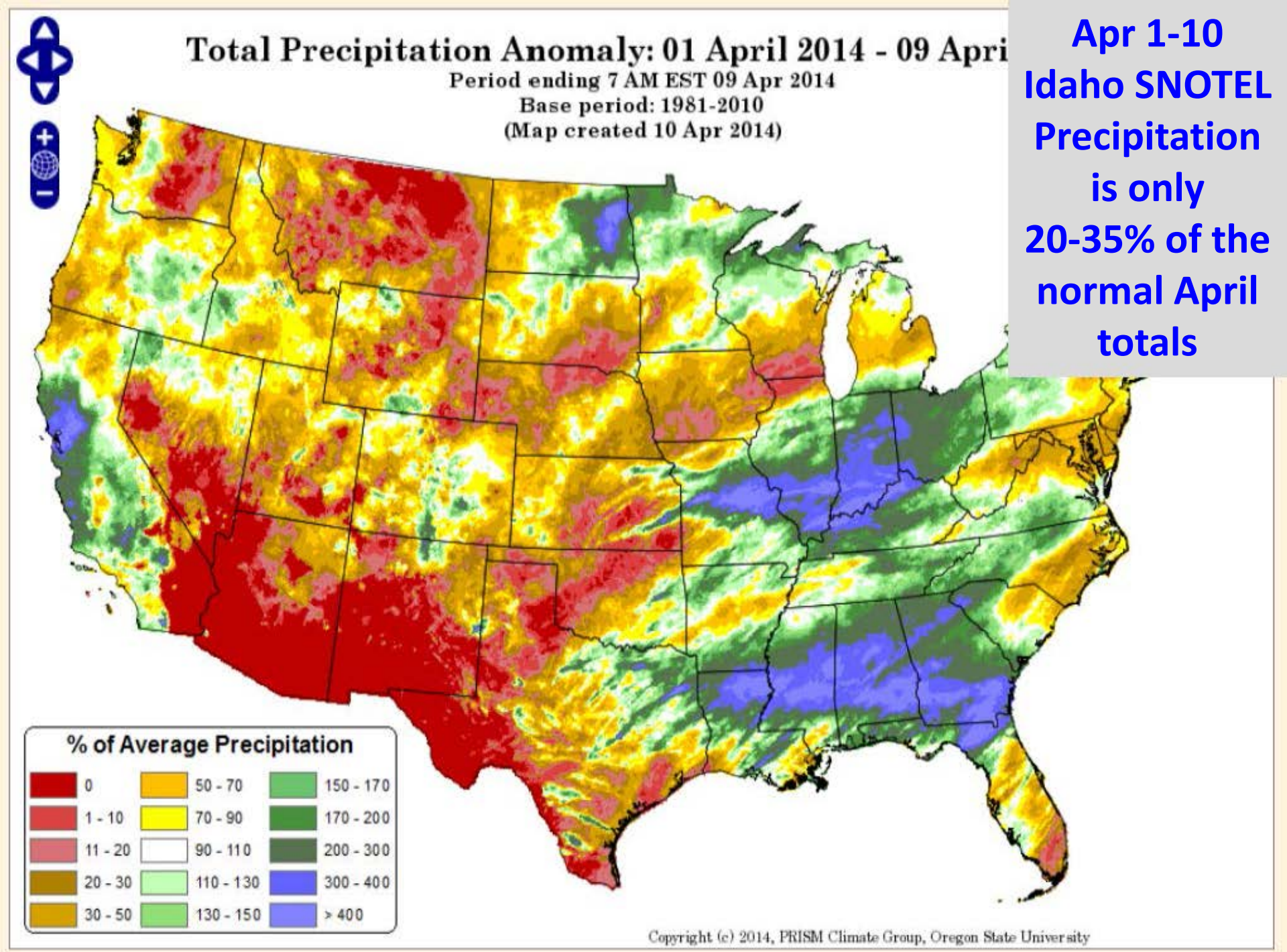
http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/

Percent of Average Monthly Precipitation
March 2014

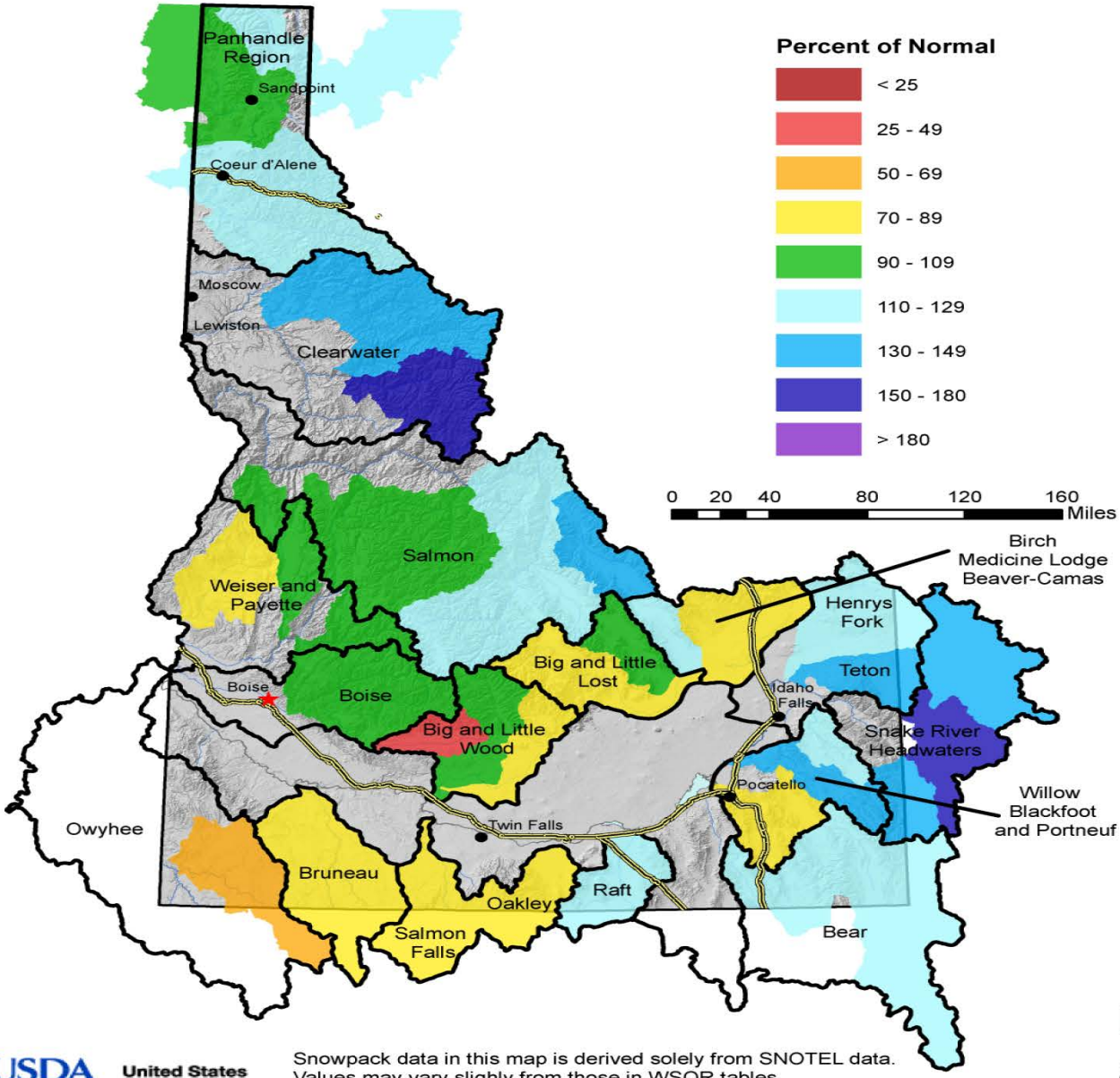


USDA United States Department of Agriculture

http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/


Total Precipitation Anomaly: 01 April 2014 - 09 Apri
Period ending 7 AM EST 09 Apr 2014
Base period: 1981-2010
(Map created 10 Apr 2014)
Apr 1-10
Idaho SNOTEL
Precipitation
is only
20-35% of the
normal April
totals
% of Average Precipitation
0
1 - 10
11 - 20
20 - 30
30 - 50
50 - 70
70 - 90
90 - 110
110 - 130
130 - 150
150 - 170
170 - 200
200 - 300
300 - 400
> 400
Copyright (c) 2014, PRISM Climate Group, Oregon State University

Percent of Normal Snowpack
April 1st, 2014

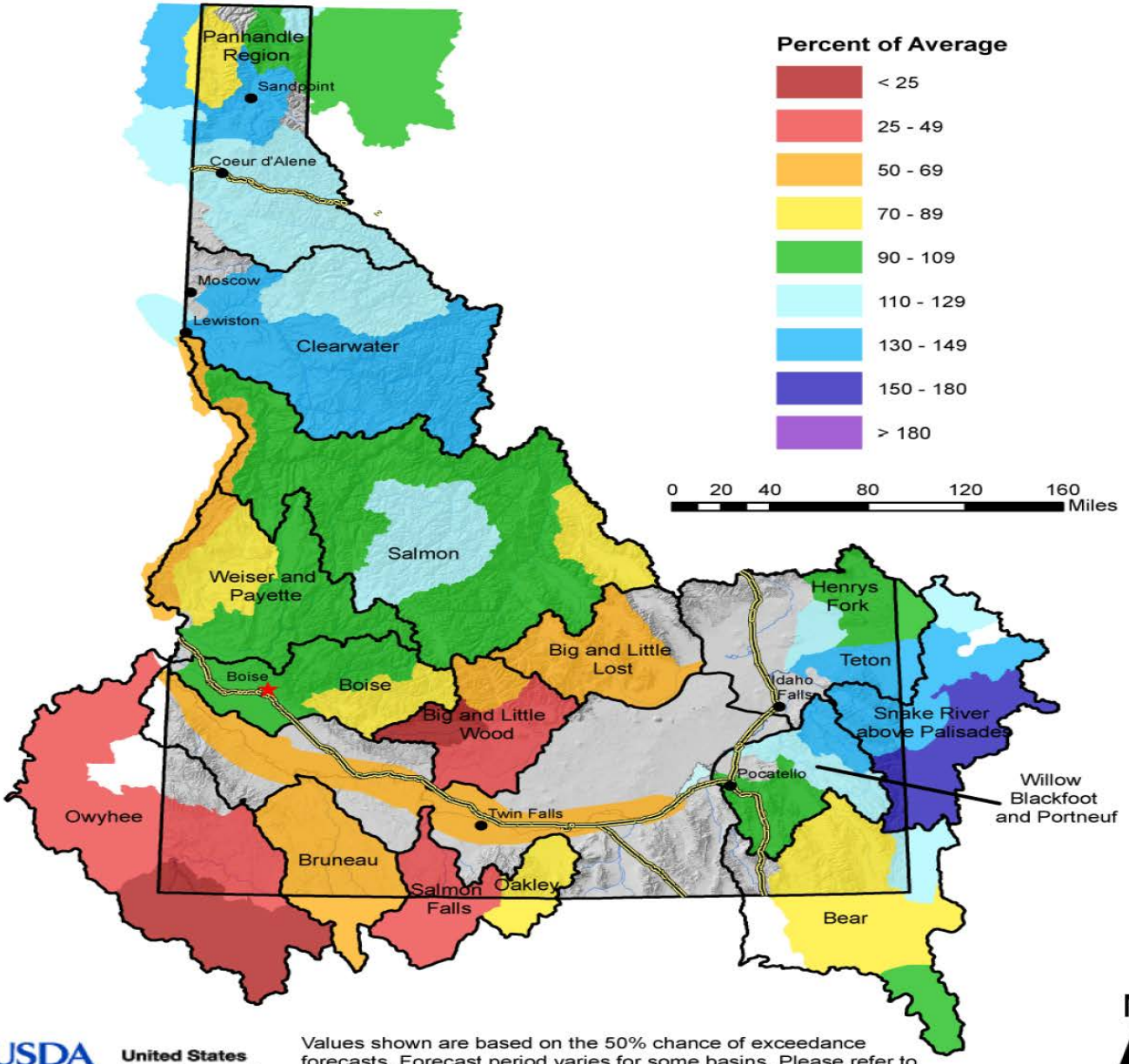


USDA United States Department of Agriculture

Snowpack data in this map is derived solely from SNOTEL data.
Values may vary slighly from those in WSOR tables.
"Normal" snowpack refers to the 1981 - 2010 median values.
http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/

April 1, 2014 Snow Index	Rank Since 1961 (53 years)	% of 1981-2010 Median	Max Values	
			year	% median
Snake River headwaters				
Snake above Heise	11th highest	147%	1971	180%
Snake above Jackson Lake	13th highest	139%	1971	181%
Hoback	12th highest	158%	1971	196%
Greys	11th highest	152%	1971	174%
Salt	8th highest	147%	1978	163%
Gros Ventre	12th highest	135%	1971	174%
Clearwater basin				
NF Clearwater	15th highest	131%	1972	191%
NF Clearwater high elevation	15th highest	130%	1997	182%
Lochsa	6th highest	147%	1972	194%
Selway	8th highest	152%	1972	197%
Clearwater basin total	15th highest	136%	1972	192%
Southside Snake			Min. values	
Oakley	22nd lowest	95%	1977	37%
Salmon Falls	13th lowest	87%	1977	48%
Owyhee	8th lowest	47%	1992	17%
Bruneau	8th lowest	67%	1963	42%

NRCS April - July Streamflow Forecasts
April 1, 2014



USDA United States Department of Agriculture

Values shown are based on the 50% chance of exceedance forecasts. Forecast period varies for some basins. Please refer to the Water Supply Outlook Report for more details regarding these forecasts.
http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/

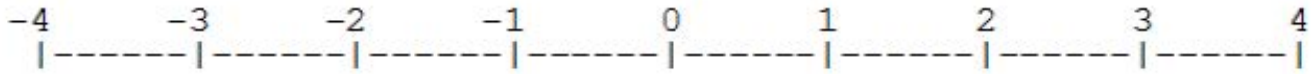
IDAHO RESERVOIR STORAGE
Usable Contents

Reservoir (s)	Percent of Capacity March 31, 2014	Percent of Average March 31, 2014
Salmon Falls	15	49
Owyhee	24	34
Oakley	29	74
Magic	38	82
Palisades & Jackson	38	65
Bear Lake	50	97
Blackfoot	51	96
Dworshak	61	88
Boise (3)	64	107
Little Wood	65	98
Ririe	66	119
Mackay	73	103
Payette (2)	75	115
Coeur d' Alene	80	116
American Falls	81	90

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) April 1, 2014

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
Northern Panhandle	1.1	2013	NA
Spokane	1.1	1989	NA
Clearwater	3.3	2008	NA
Salmon	0.4	1998	NA
Weiser	-1.1	2009	NA
Payette	-0.1	2010	NA
Boise	0.1	2000	-2.0
Big Wood	-1.6	2003	0.0
Little Wood	-1.6	2004	-1.5
Big Lost	-1.6	2007	0.5
Little Lost	-2.1	2007	1.2
Teton	2.8	1984	-3.9
Henrys Fork	1.1	2008	-3.4
Snake (Heise)	2.1	2009	-1.5
Oakley	-1.3	2013	-0.2
Salmon Falls	-3.3	2003	-1.0
Bruneau	-1.6	1990	NA
Owyhee	-3.6	1992/2003/1988	-3.4
Bear River	0.6	2013	-3.4

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



April 1, 2014 Water Supply - Amount Needed, Shortages & Surplus

Based on All Five Chance of Exceedance Forecasts

BASIN or REGION	*Adequate Irrigation Water Supply (KAF)*	*March 31 Reservoir Storage (KAF)*	*Streamflow Volume Needed for Adequate Water Supply*		*90% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)*		*70% Chance Of Exceedance Streamflow Forecast Apr-Sep (KAF)*		*50% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)*		*30% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)*		*10% Chance Of Exceedance Streamflow Forecast Apr-Sep (KAF)*		*Percent of Adequate Supply Based on 50% Chance of Exceedance Streamflow Forecast*
			KAF	*% Avg*	fcst	*diff*	fcst	*diff*	fcst	*diff*	fcst	*diff*	fcst	*diff*	
Salmon Falls	110	27	83	*112%*	18	*-65*	27	*-56*	35	*-48*	44	*-39*	58	*-25*	42%
Little Lost	40	NA	40	*118%*	13	*-27*	17	*-23*	21	*-19*	25	*-15*	32	*-8*	53%
Big Lost	180	32	148	*99%*	29	*-119*	63	*-85*	86	*-62*	109	*-39*	143	*-5*	58%
Big Wood	275	73	202	*76%*	37	*-165*	91	*-111*	127	*-75*	163	*-39*	215	*13*	63%
Oakley	50	22	28	*108%*	7	*-21*	15	*-13*	19	*-9*	24	*-4*	32	*4*	68%
Owyhee	450	170	280	*69%*	108	*-172*	156	*-124*	193	*-87*	235	*-45*	300	*20*	69%
Little Wood	60	19	41	*49%*	17	*-24*	30	*-11*	39	*-2*	48	*7*	61	*20*	95%
Boise	1500	645	855	*63%*	1000	*145*	1210	*355*	1300	*445*	1390	*535*	1600	*745*	152%
Snake (Heise)	4400	864	3536	*94%*	5000	*1464*	5280	*1744*	5470	*1934*	5660	*2124*	5940	*2404*	155%
Teton	85	NA	85	*44%*	205	*120*	245	*160*	270	*185*	300	*215*	345	*260*	318%
Bear River	400	711													

Adequate Supply **−** Reservoir Storage **=** Streamflow Needed

Water Supply Outlook Key:

Shortages	Some Shortages	Marginal Supplies	Sufficient Supplies	Surplus

April 1, 2014 Water Supply - Amount Needed, Shortages & Surplus

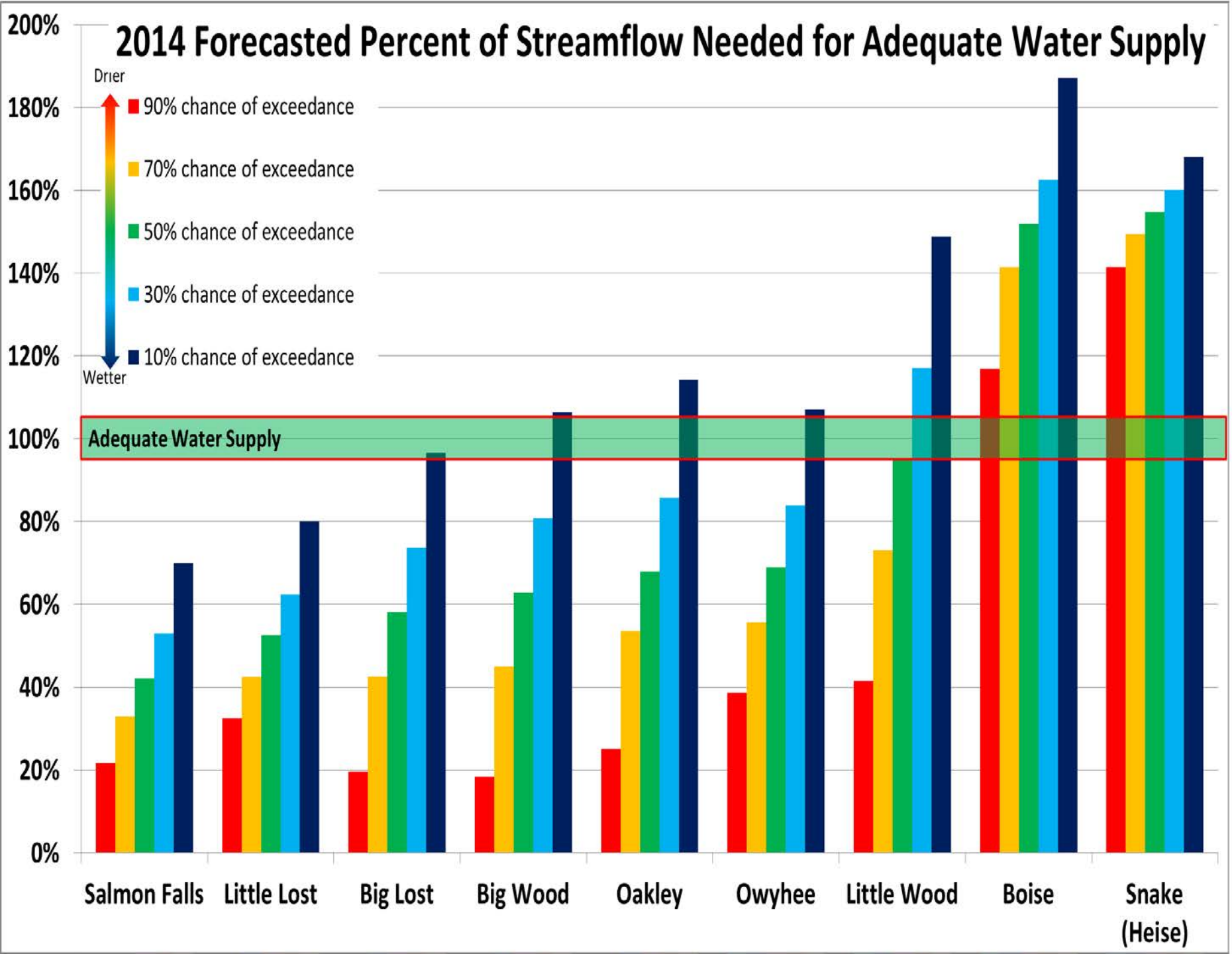
Based on All Five Chance of Exceedance Forecasts

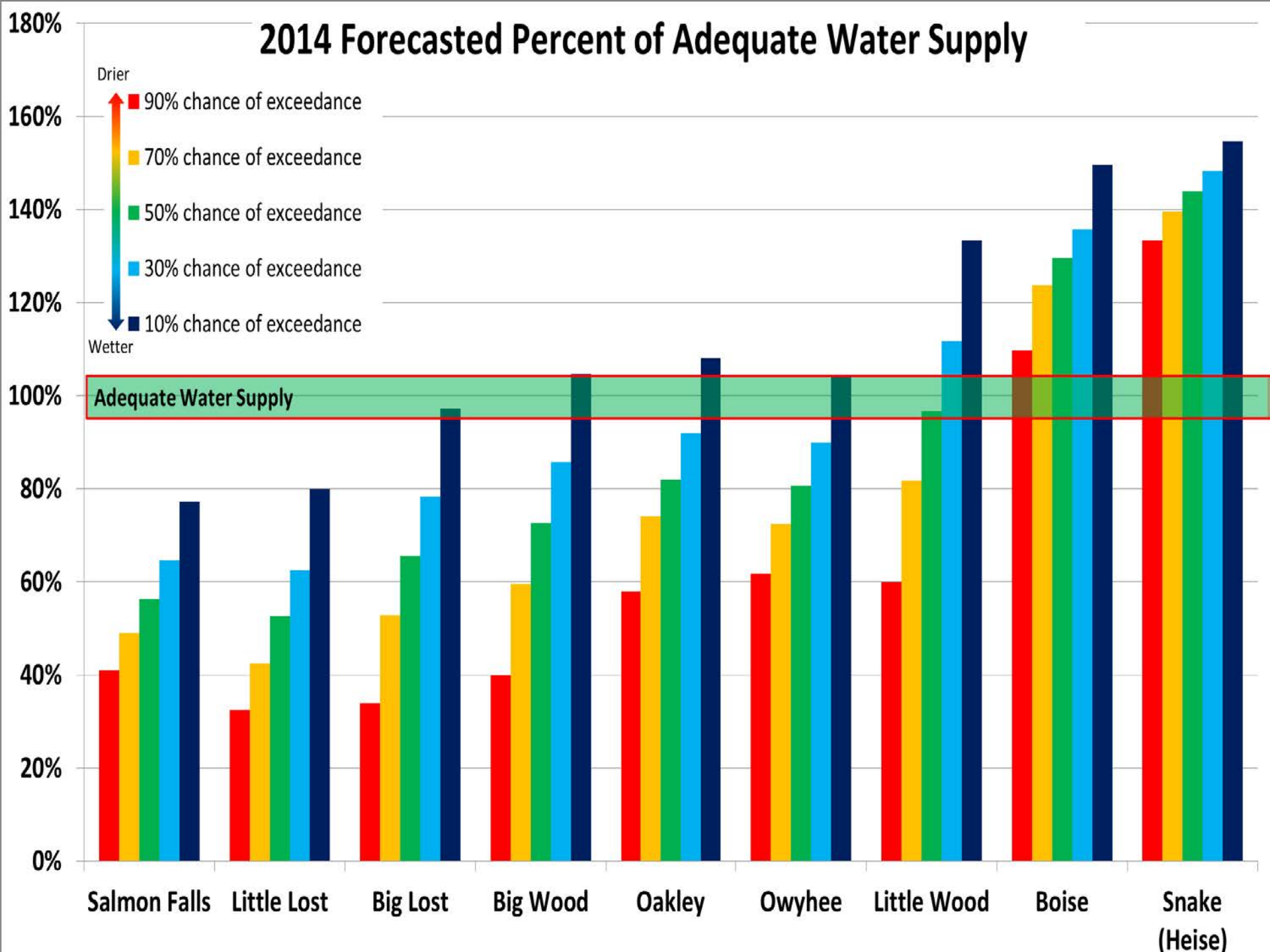
BASIN or REGION	Adequate Irrigation Water Supply (KAF)	March 31 Reservoir Storage (KAF)	Streamflow Volume Needed for Adequate Water Supply		90% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)		70% Chance Of Exceedance Streamflow Forecast Apr-Sep (KAF)		50% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)		30% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)		10% Chance Of Exceedance Streamflow Forecast Apr-Sep (KAF)		Percent of Adequate Supply Based on 50% Chance of Exceedance Streamflow Forecast
			KAF	% Avg	fcst	diff	fcst	diff	fcst	diff	fcst	diff	fcst	diff	
Salmon Falls	110	27	83	112%	18	-65	27	-56	35	-48	44	-39	58	-25	42%
Little Lost	40	NA	40	118%	13	-27	17	-23	21	-19	25	-15	32	-8	53%
Big Lost	180	32	148	99%	29	-119	63	-85	86	-62	109	-39	143	-5	58%
Big Wood	275	73	202	76%	37	-165	91	-111	127	-75	163	-39	215	13	63%
Oakley	50	22	28	108%	7	-21	15	-13	19	-9	24	-4	32	4	68%
Owyhee	450	170	280	69%	108	-172	156	-124	193	-87	235	-45	300	20	69%
Little Wood	60	19	41	49%	17	-24	30	-11	39	-2	48	7	61	20	95%
Boise	1500	645	855	63%	1000	145	1210	355	1300	445	1390	535	1600	745	152%
Snake (Heise)	4400	864	3536	94%	5000	1464	5280	1744	5470	1934	5660	2124	5940	2404	155%
Teton	85	NA	85	44%	205	120	245	160	270	185	300	215	345	260	318%
Bear River	400	711													

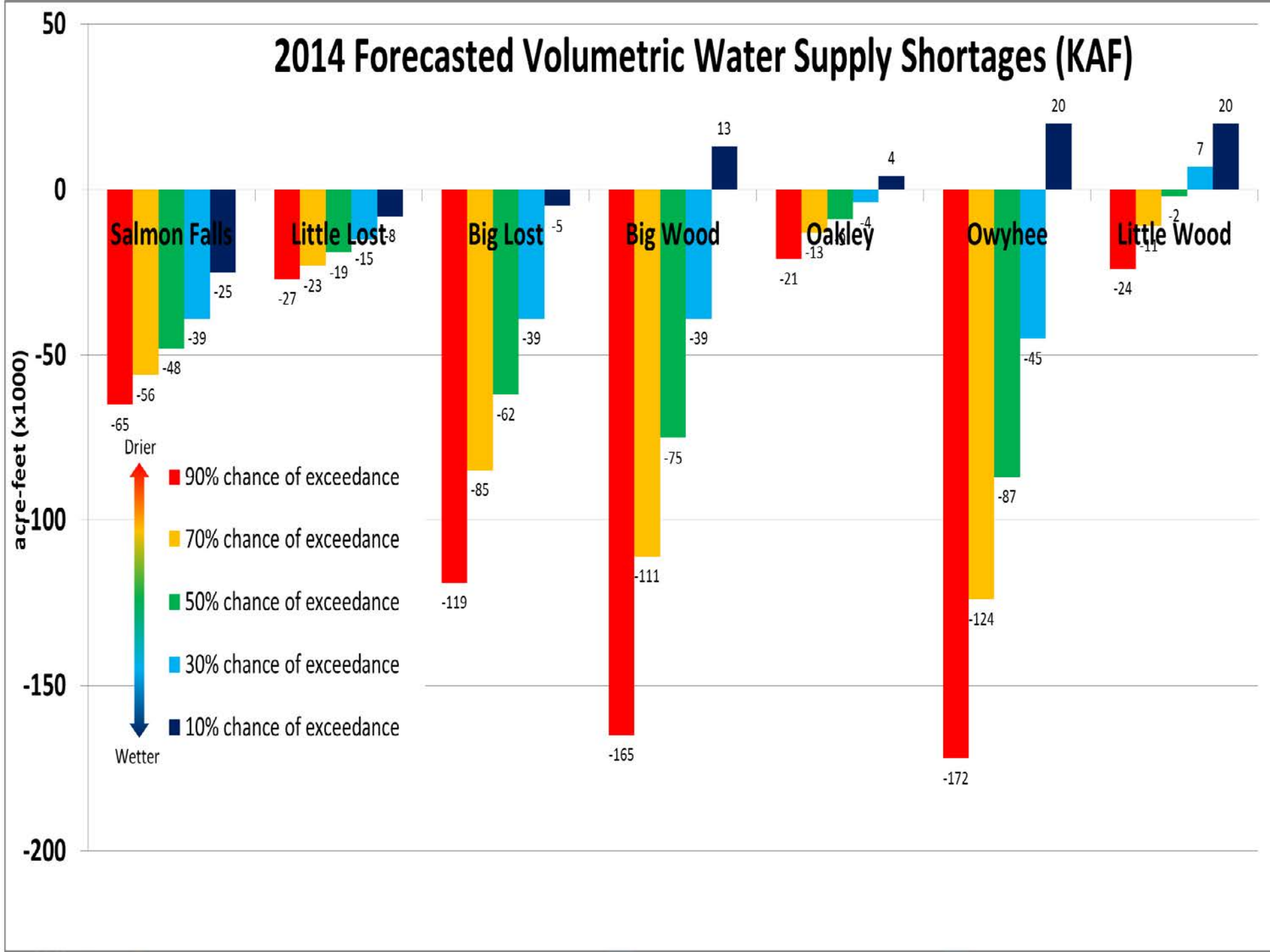
Adequate Supply − Reservoir Storage = Streamflow Needed

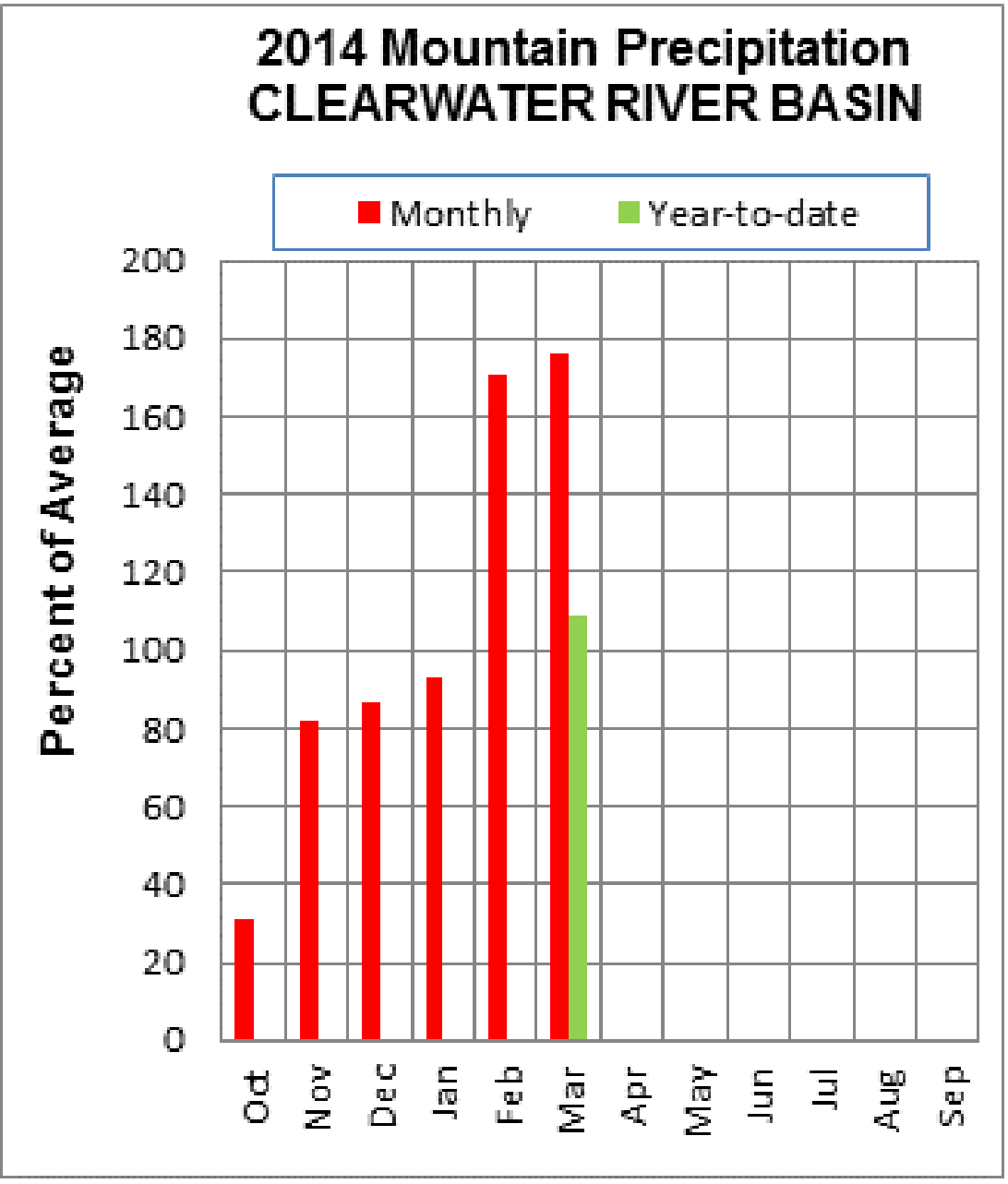
Water Supply Outlook Key:

Shortages	Some Shortages	Marginal Supplies	Sufficient Supplies	Surplus


2014 Forecasted Percent of Streamflow Needed for Adequate Water Supply
Drier
Wetter
90% chance of exceedance
70% chance of exceedance
50% chance of exceedance
30% chance of exceedance
10% chance of exceedance
Adequate Water Supply
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
Salmon Falls
Little Lost
Big Lost
Big Wood
Oakley
Owyhee
Little Wood
Boise
Snake (Heise)


2014 Forecasted Percent of Adequate Water Supply
Drier
90% chance of exceedance
70% chance of exceedance
50% chance of exceedance
30% chance of exceedance
10% chance of exceedance
Wetter
Adequate Water Supply
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
Salmon Falls
Little Lost
Big Lost
Big Wood
Oakley
Owyhee
Little Wood
Boise
Snake (Heise)

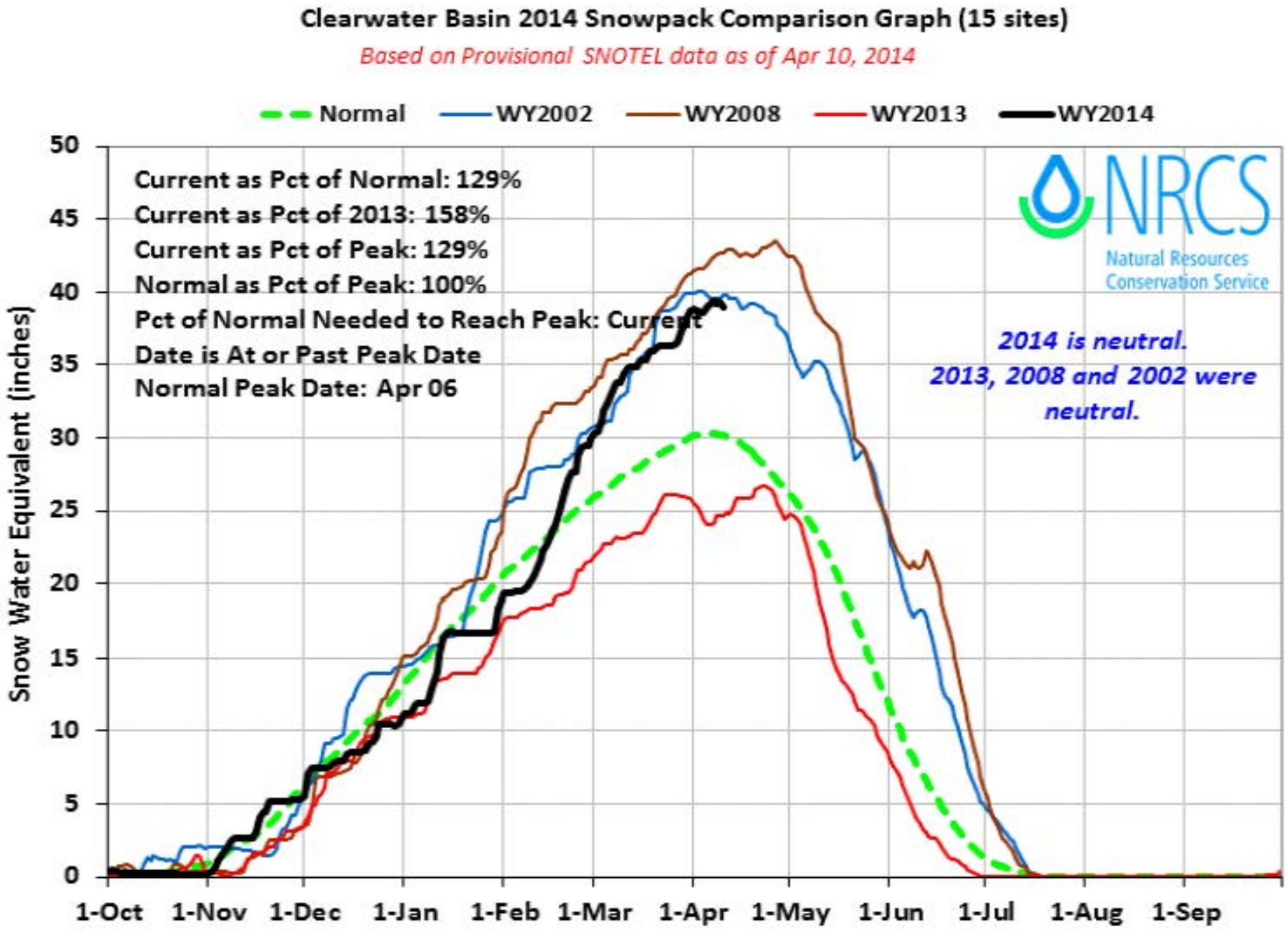

2014 Forecasted Volumetric Water Supply Shortages (KAF)
acre-feet (x1000)
50
0
-50
-100
-150
-200
Salmon Falls
-65
-56
-48
-39
-25
Little Lost
-27
-23
-19
-15
-8
Big Lost
-119
-85
-62
-39
-5
Big Wood
-165
-111
-75
-39
13
Oakley
-21
-13
-4
4
Owyhee
-172
-124
-87
-45
20
Little Wood
-24
-11
-2
7
20
Drier
Wetter
90% chance of exceedance
70% chance of exceedance
50% chance of exceedance
30% chance of exceedance
10% chance of exceedance

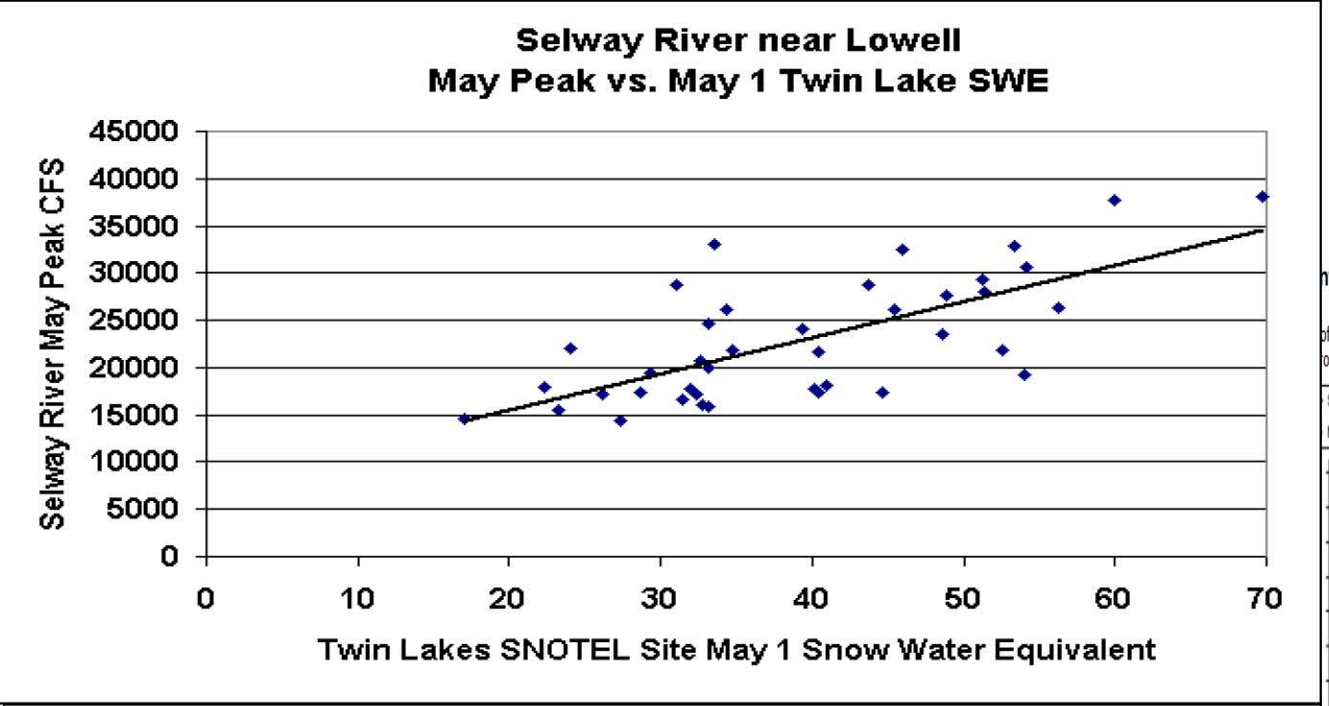


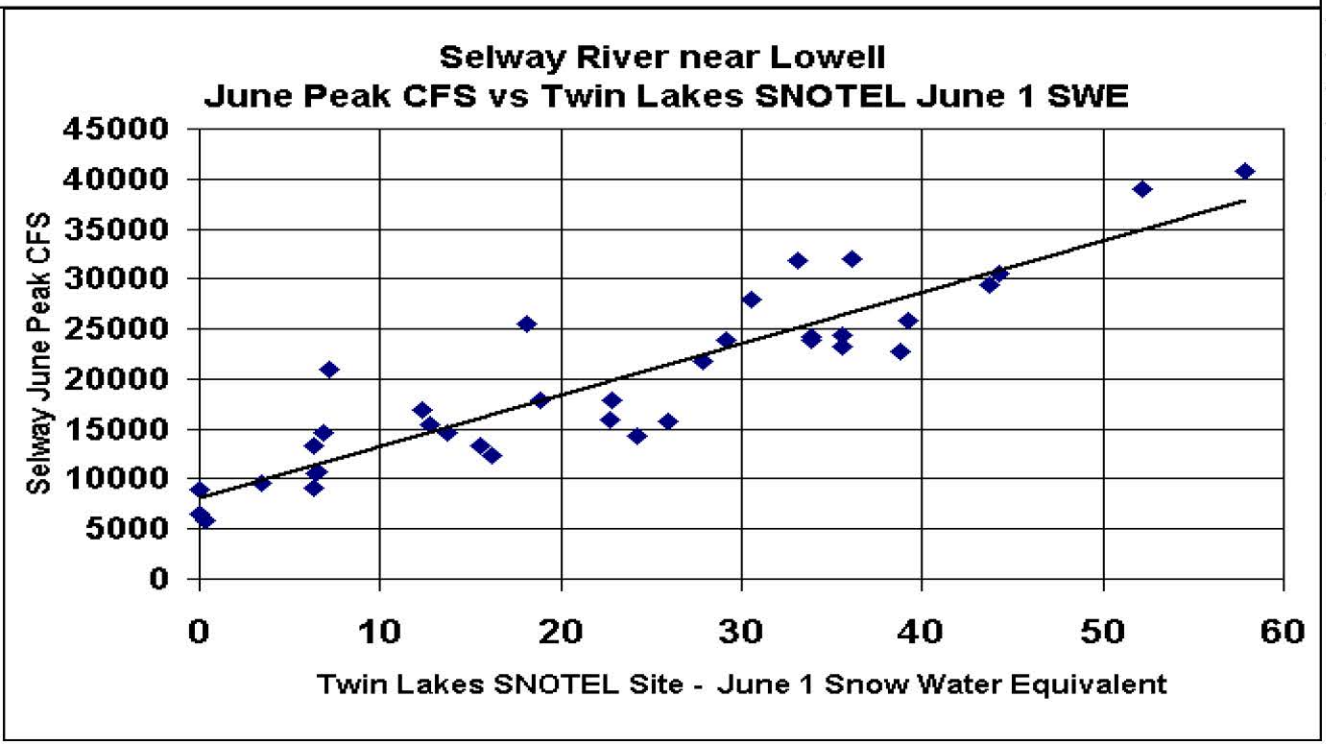
Combining Feb & Mar precipitation resulted in largest SWE increases on record for the Lochsa, records start 1961.

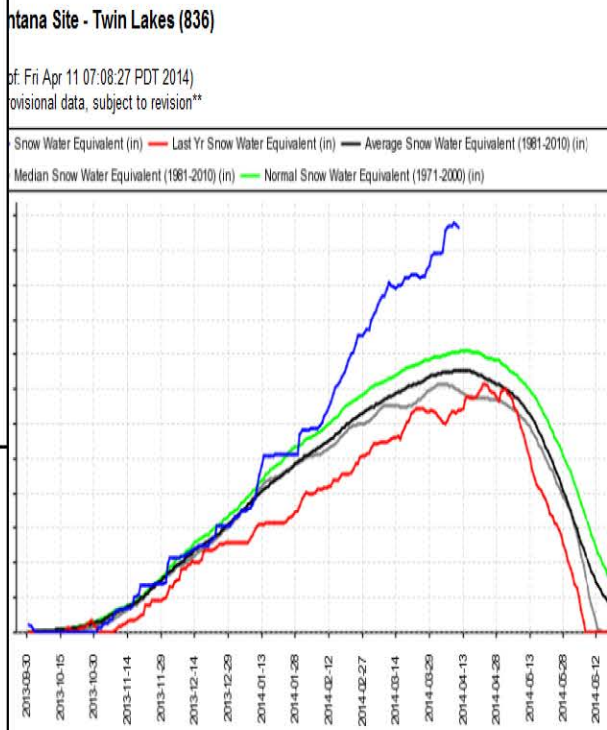
The NF Clearwater & Clearwater basin - had 2nd largest Feb-Mar snowpack increase since 1961.

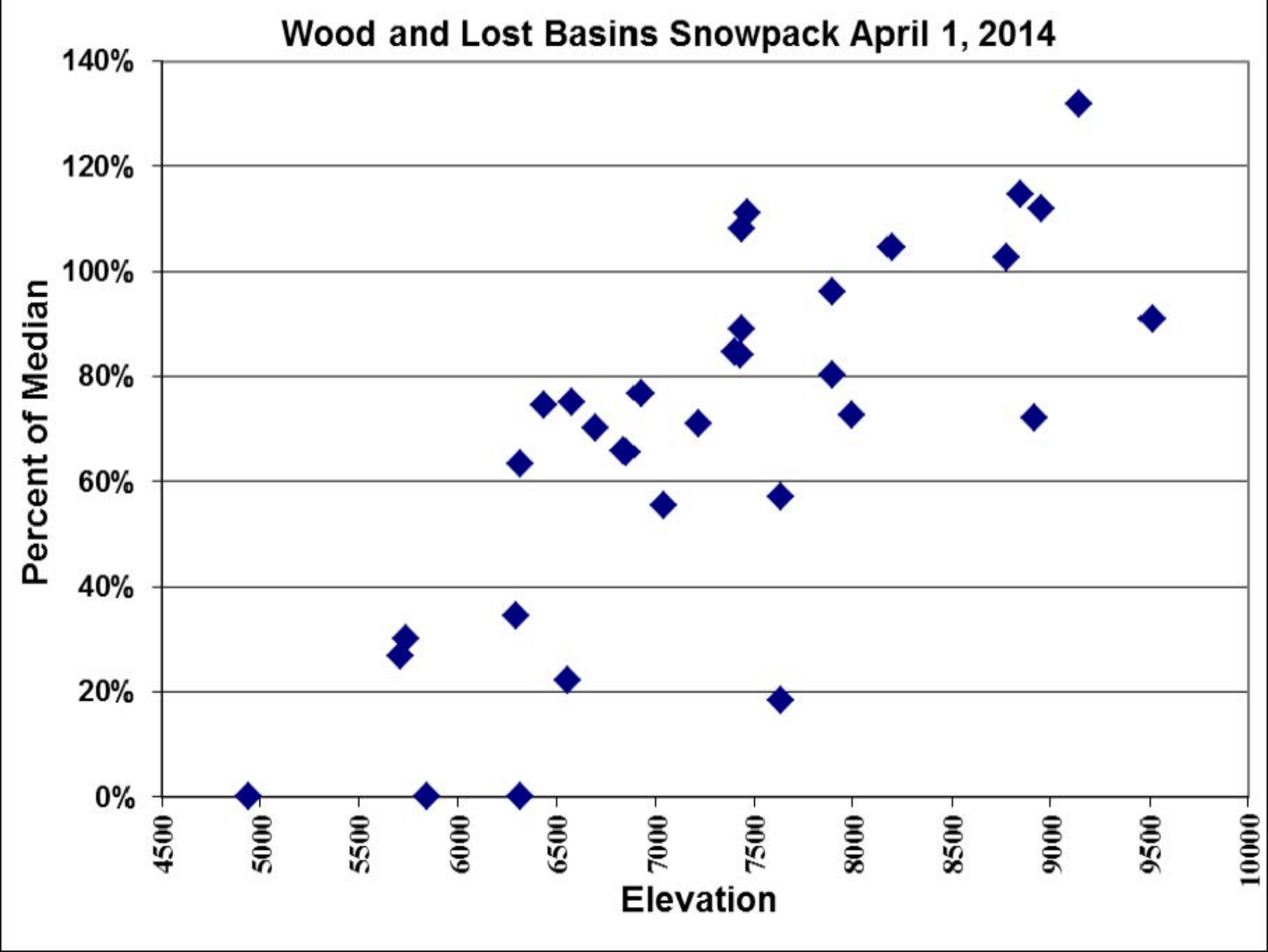
Combined Feb-Mar precipitation resulted in at least 20 sites ranked in the top 5 wettest precipitation totals since daily precipitaiion records start in the early 1980s.


Clearwater Basin 2014 Snowpack Comparison Graph (15 sites)
Based on Provisional SNOTEL data as of Apr 10, 2014
Normal
WY2002
WY2008
WY2013
WY2014
Current as Pct of Normal: 129%
Current as Pct of 2013: 158%
Current as Pct of Peak: 129%
Normal as Pct of Peak: 100%
Pct of Normal Needed to Reach Peak: Current
Date is At or Past Peak Date
Normal Peak Date: Apr 06
NRCS
Natural Resources Conservation Service
2014 is neutral.
2013, 2008 and 2002 were neutral.
Snow Water Equivalent (inches)
50
45
40
35
30
25
20
15
10
5
0
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep

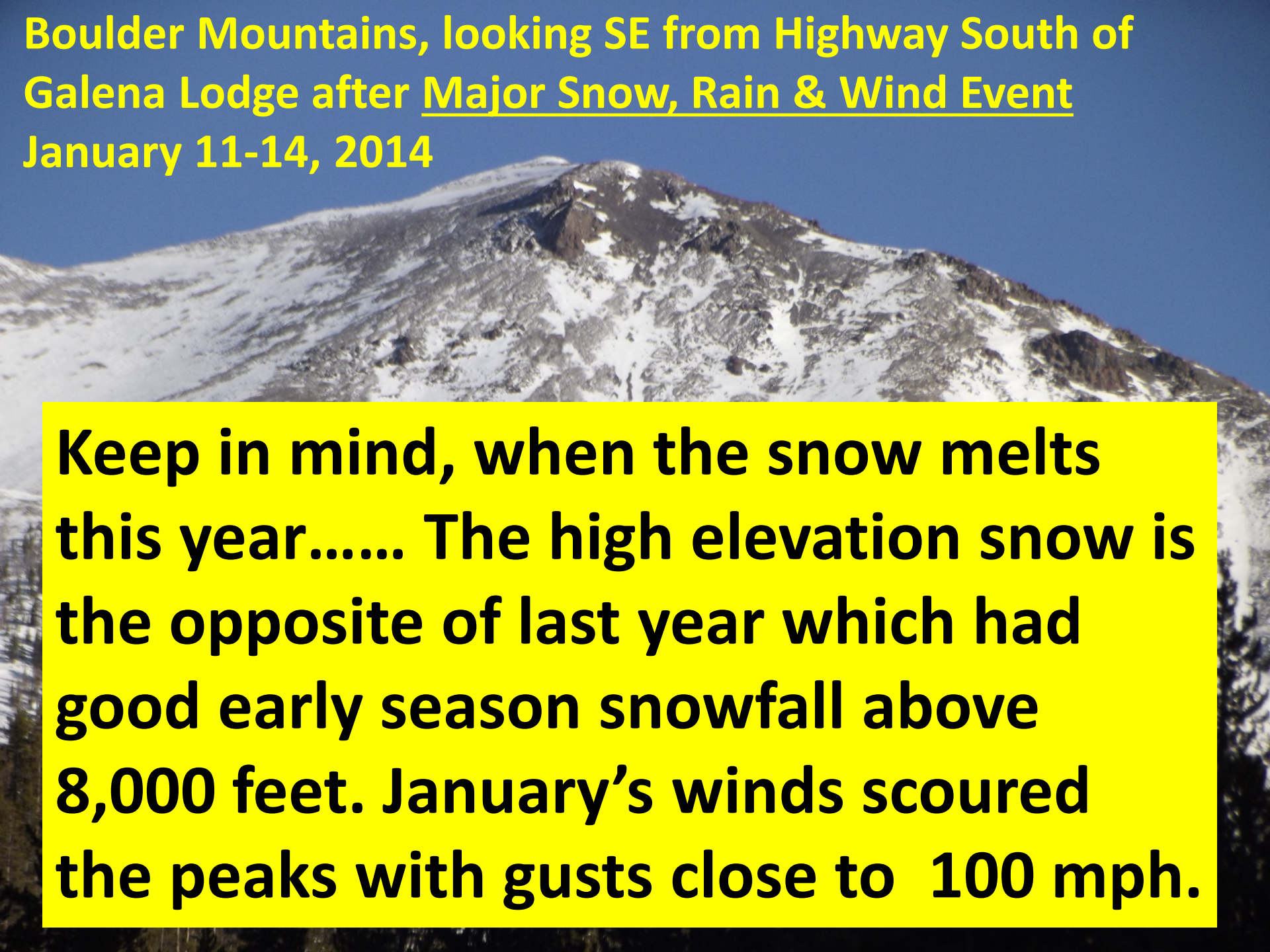

Selway River near Lowell
May Peak vs. May 1 Twin Lake SWE
Selway River May Peak CFS
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
10
20
30
40
50
60
70
Twin Lakes SNOTEL Site May 1 Snow Water Equivalent


Selway River near Lowell
June Peak CFS vs Twin Lakes SNOTEL June 1 SWE
Selway June Peak CFS
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
10
20
30
40
50
60
Twin Lakes SNOTEL Site - June 1 Snow Water Equivalent


ntana Site - Twin Lakes (836)
of: Fri Apr 11 07:08:27 PDT 2014)
ovisional data, subject to revision**
Snow Water Equivalent (in)
Last Yr Snow Water Equivalent (in)
Average Snow Water Equivalent (1981-2010) (in)
Median Snow Water Equivalent (1981-2010) (in)
Normal Snow Water Equivalent (1971-2000) (in)
2013-09-30
2013-10-15
2013-10-30
2013-11-14
2013-11-29
2013-12-14
2013-12-29
2014-01-13
2014-01-28
2014-02-12
2014-02-27
2014-03-14
2014-03-29
2014-04-13
2014-04-28
2014-05-13
2014-05-28
2014-06-12

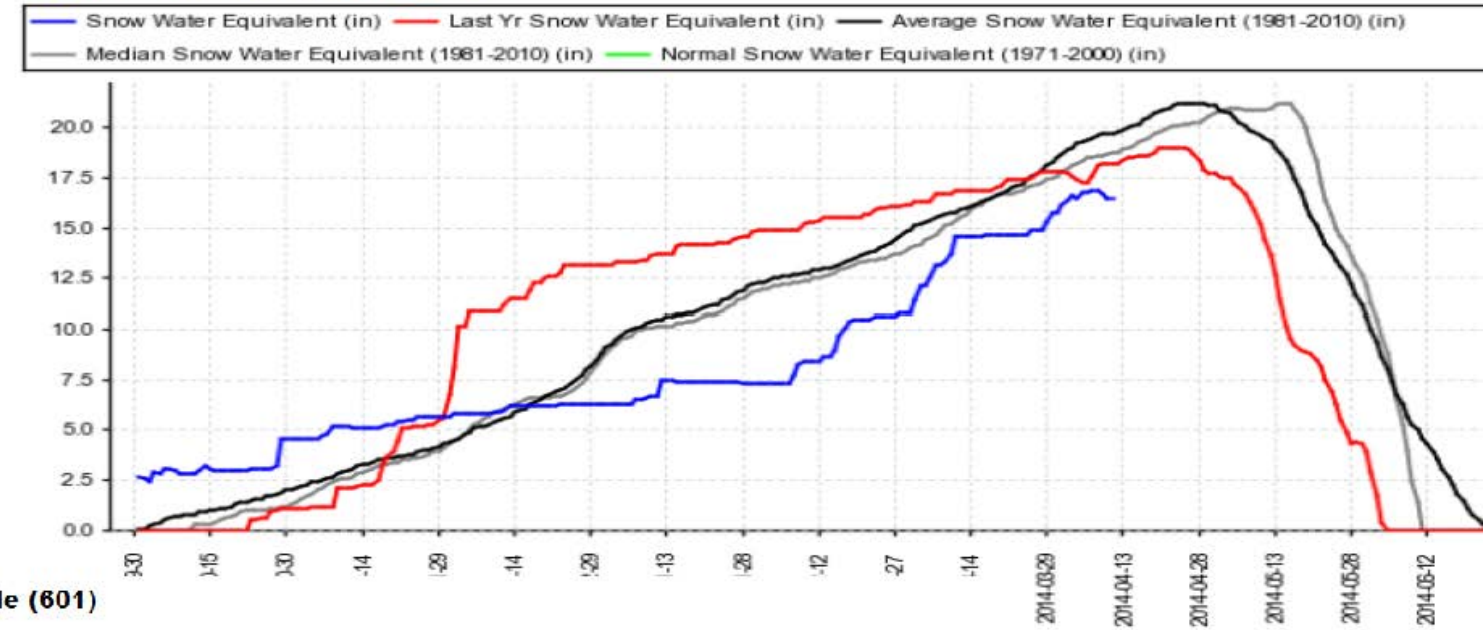

Wood and Lost Basins Snowpack April 1, 2014
Percent of Median
140%
120%
100%
80%
60%
40%
20%
0%
4500
5000
5500
6000
6500
7000
7500
8000
8500
9000
9500
10000
Elevation


Boulder Mountains, looking SE from Highway South of Galena Lodge after Major Snow, Rain & Wind Event January 11-14, 2014


Boulder Mountains, looking SE from Highway South of Galena Lodge after Major Snow, Rain & Wind Event January 11-14, 2014
Keep in mind, when the snow melts this year…… The high elevation snow is the opposite of last year which had good early season snowfall above 8,000 feet. January's winds scoured the peaks with gusts close to 100 mph.

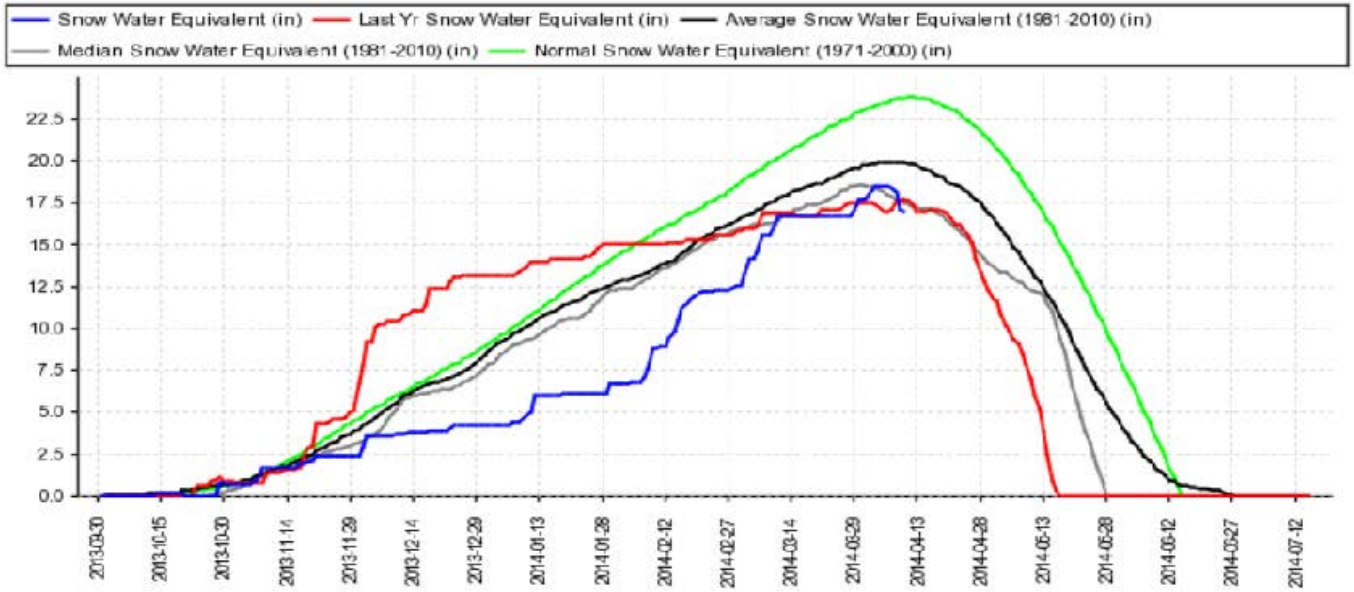
Idaho Site - Smiley Mountain (926)

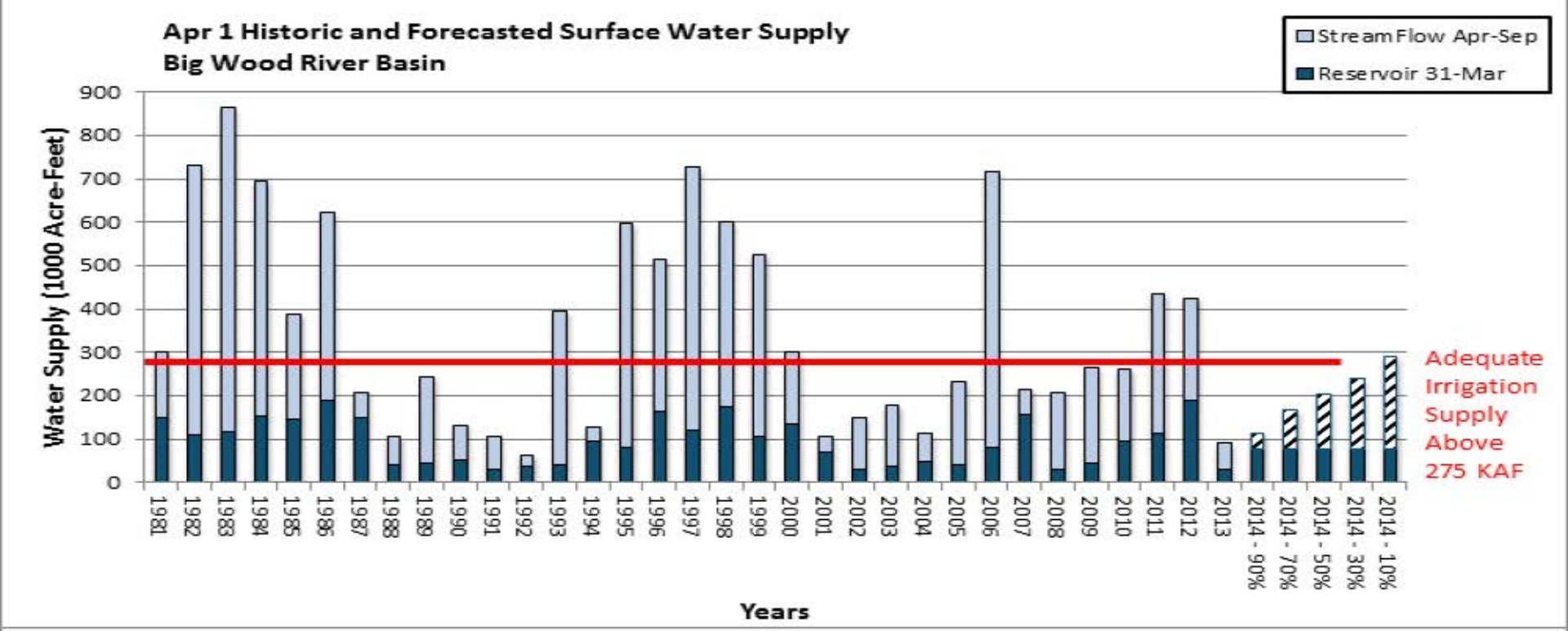
(As of: Fri Apr 11 07:12:02 PDT 2014)
Provisional data, subject to revision

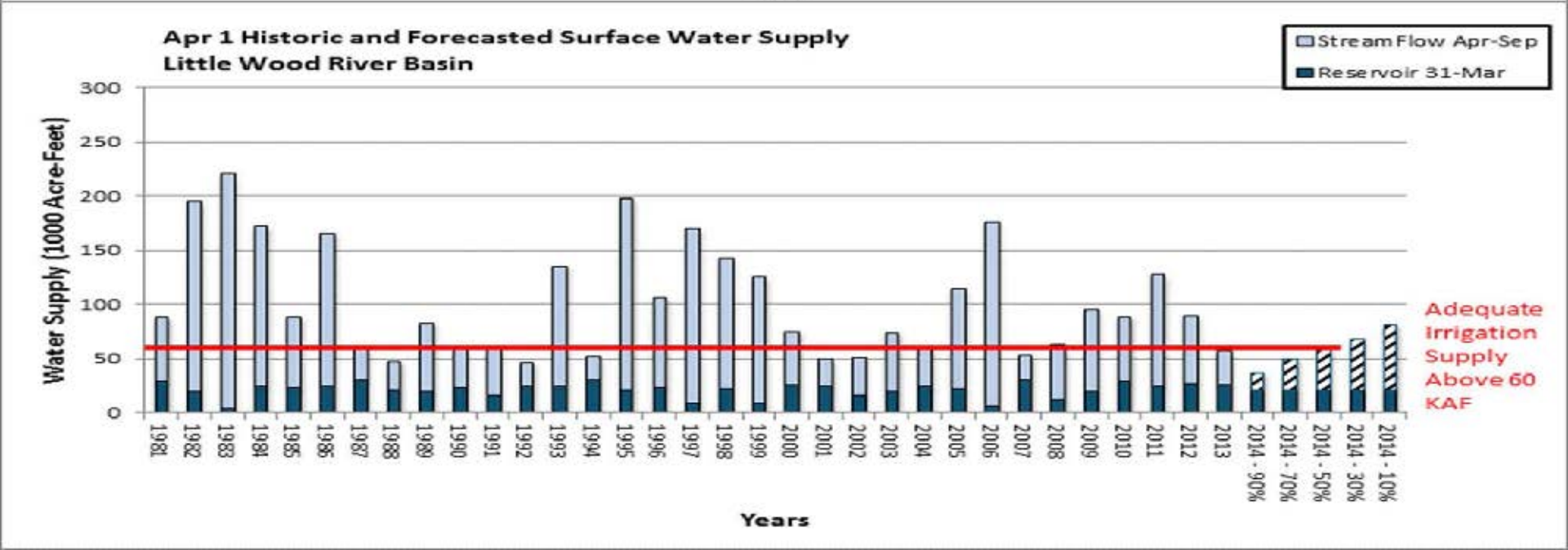


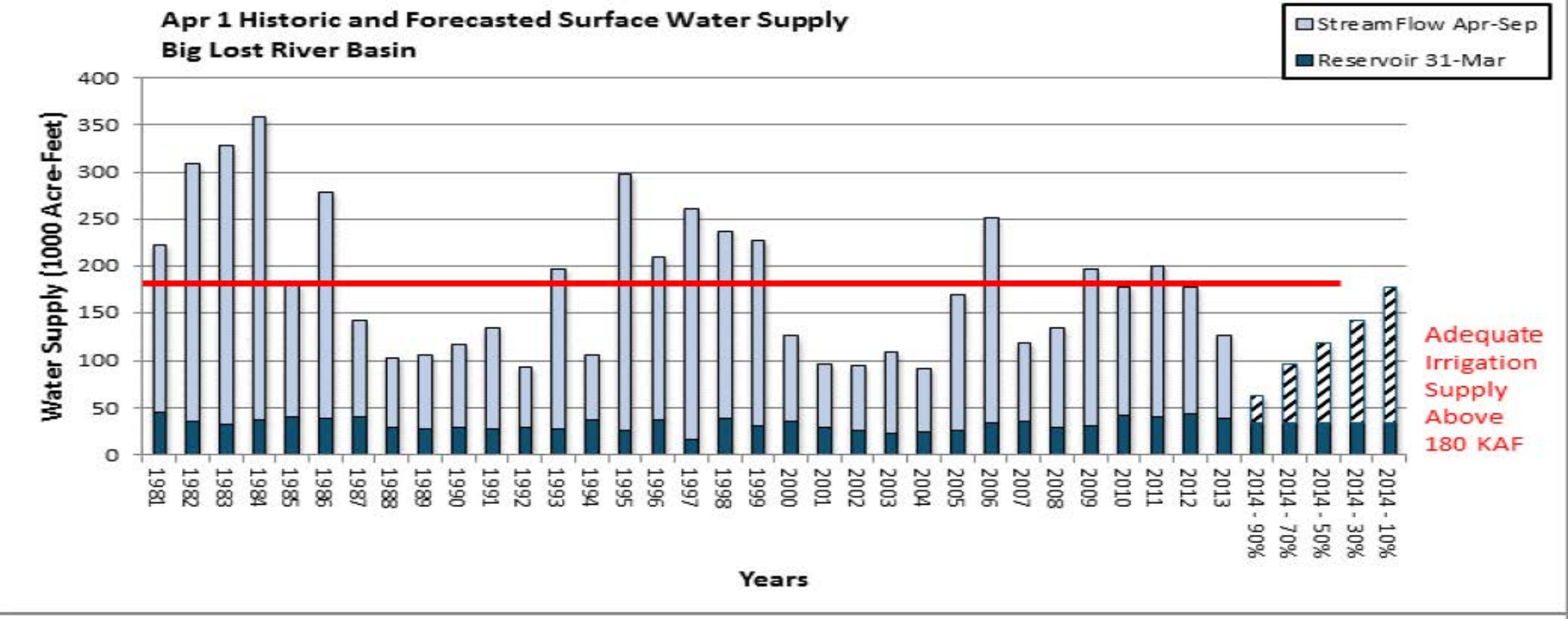
Idaho Site - Lost-wood Divide (601)

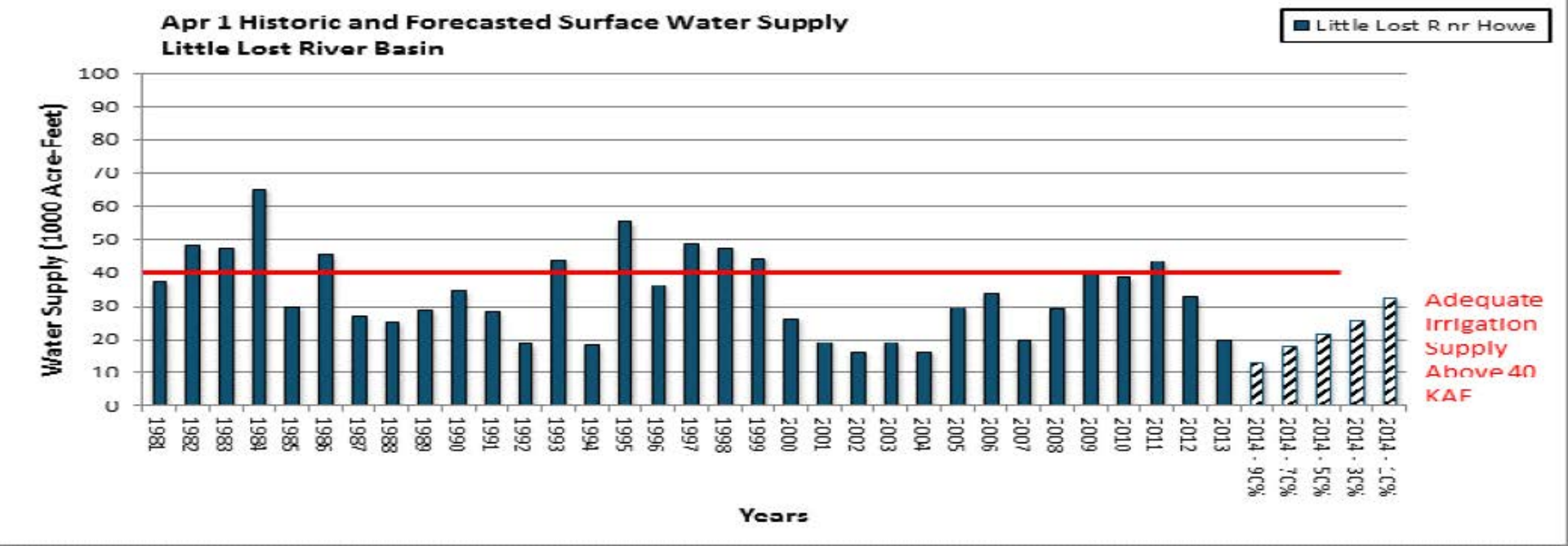
(As of: Thu Apr 10 14:24:12 PDT 2014)
Provisional data, subject to revision




Apr 1 Historic and Forecasted Surface Water Supply
Big Wood River Basin
Stream Flow Apr-Sep
Reservoir 31-Mar
Water Supply (1000 Acre-Feet)
900
800
700
600
500
400
300
200
100
0
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014 - 90%
2014 - 70%
2014 - 50%
2014 - 30%
2014 - 10%
Years
Adequate Irrigation Supply Above 275 KAF

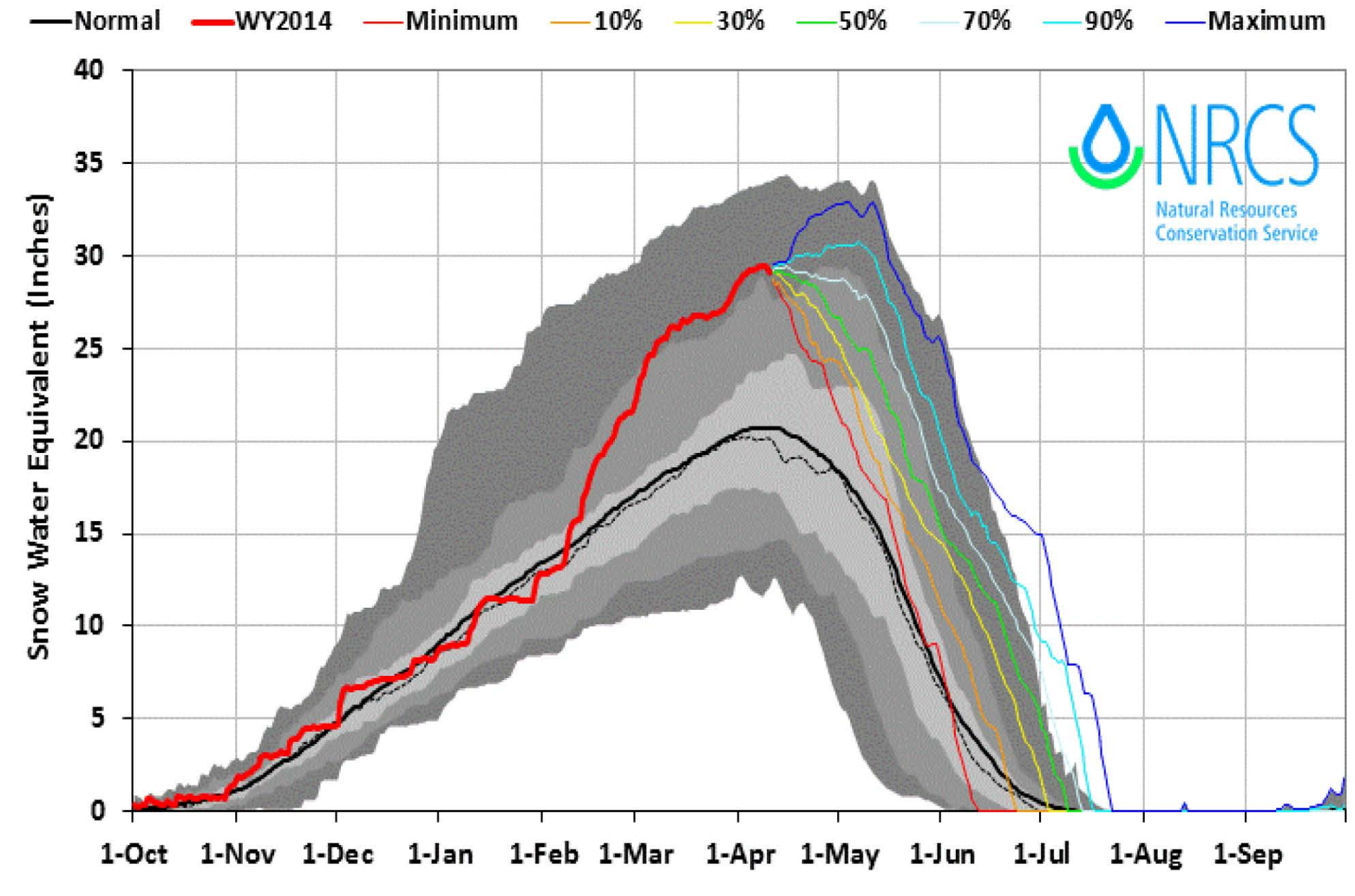

Apr 1 Historic and Forecasted Surface Water Supply
Little Wood River Basin
Stream Flow Apr-Sep
Reservoir 31-Mar
Water Supply (1000 Acre-Feet)
300
250
200
150
100
50
0
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014 - 90%
2014 - 70%
2014 - 50%
2014 - 30%
2014 - 10%
Years
Adequate Irrigation Supply Above 60 KAF

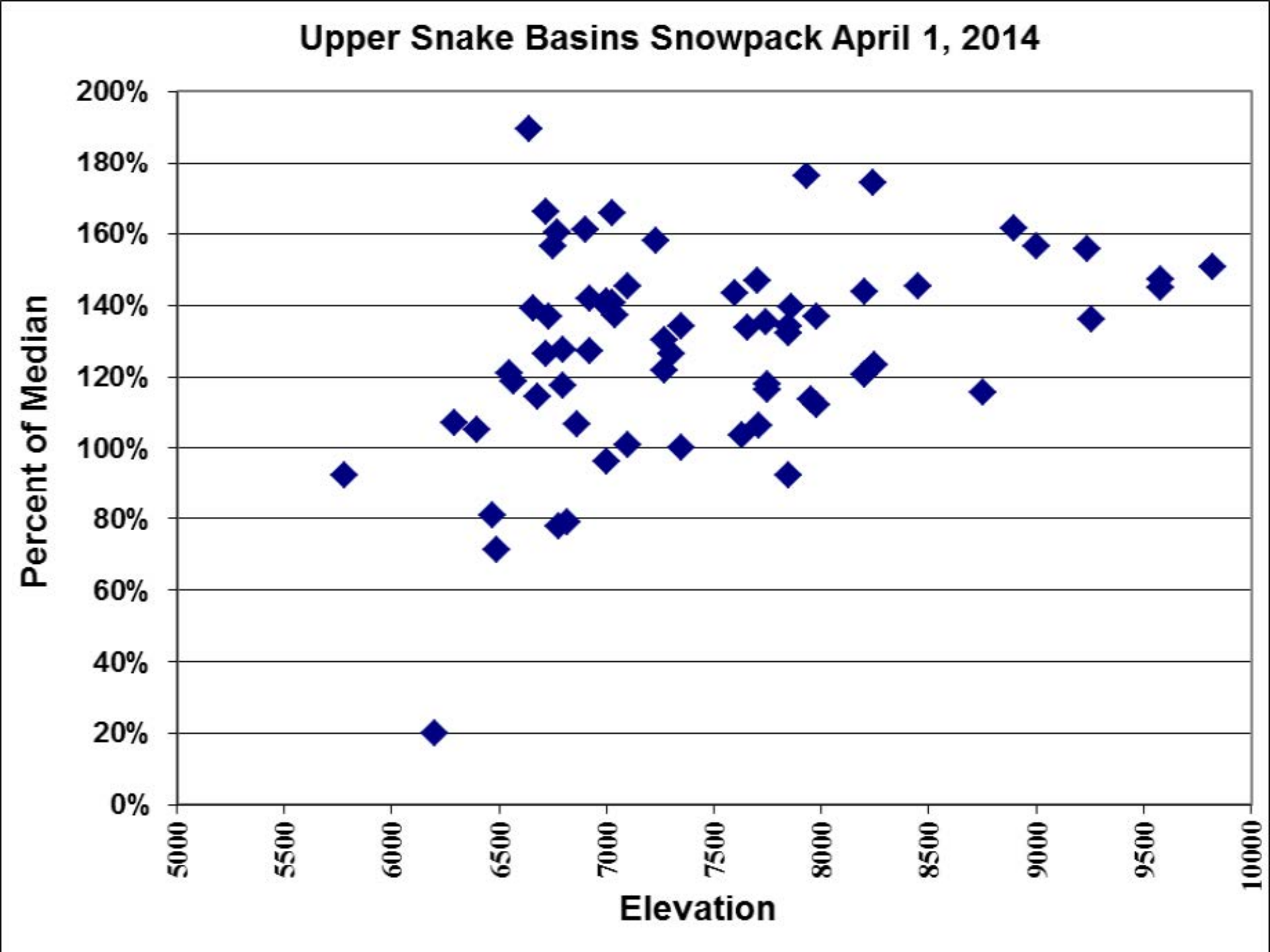

Apr 1 Historic and Forecasted Surface Water Supply
Big Lost River Basin
Stream Flow Apr-Sep
Reservoir 31-Mar
Water Supply (1000 Acre-Feet)
400
350
300
250
200
150
100
50
0
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014 - 90%
2014 - 70%
2014 - 50%
2014 - 30%
2014 - 10%
Years
Adequate Irrigation Supply Above 180 KAF


Apr 1 Historic and Forecasted Surface Water Supply
Little Lost River Basin
Little Lost R nr Howe
Water Supply (1000 Acre-Feet)
100
90
80
70
60
50
40
30
20
10
0
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014 - 90%
2014 - 70%
2014 - 50%
2014 - 30%
Years
Adequate Irrigation Supply Above 40 KAF

Snake Basin above Palisades 2014 Snow Water with Non-Exceedence Projections (18 sites)

Based on Provisional SNOTEL data as of Apr 10, 2014




Upper Snake Basins Snowpack April 1, 2014
Percent of Median
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
5000
5500
6000
6500
7000
7500
8000
8500
9000
9500
10000
Elevation

Snake River Near Heise SWSI Adequate Water Supply Greater than -1.5 SWSI or 4,400 KAF

Station ID	Station Name	Period	Data Type	Years	# of Years	
13037500	Snake River near Heise	Apr-Sep	strm	1981-2013	33	Units KAF
13010500	Jackson Lake	31-Mar	resv	1981-2013	33	Units KAF
13032450	Palisades Reservoir	31-Mar	resv	1981-2013	33	Units KAF

ENSO Classification

SE Strong El Nino - EN Mild El Nino - N Neutral - LN Mild La Nina - SL Strong La Nina

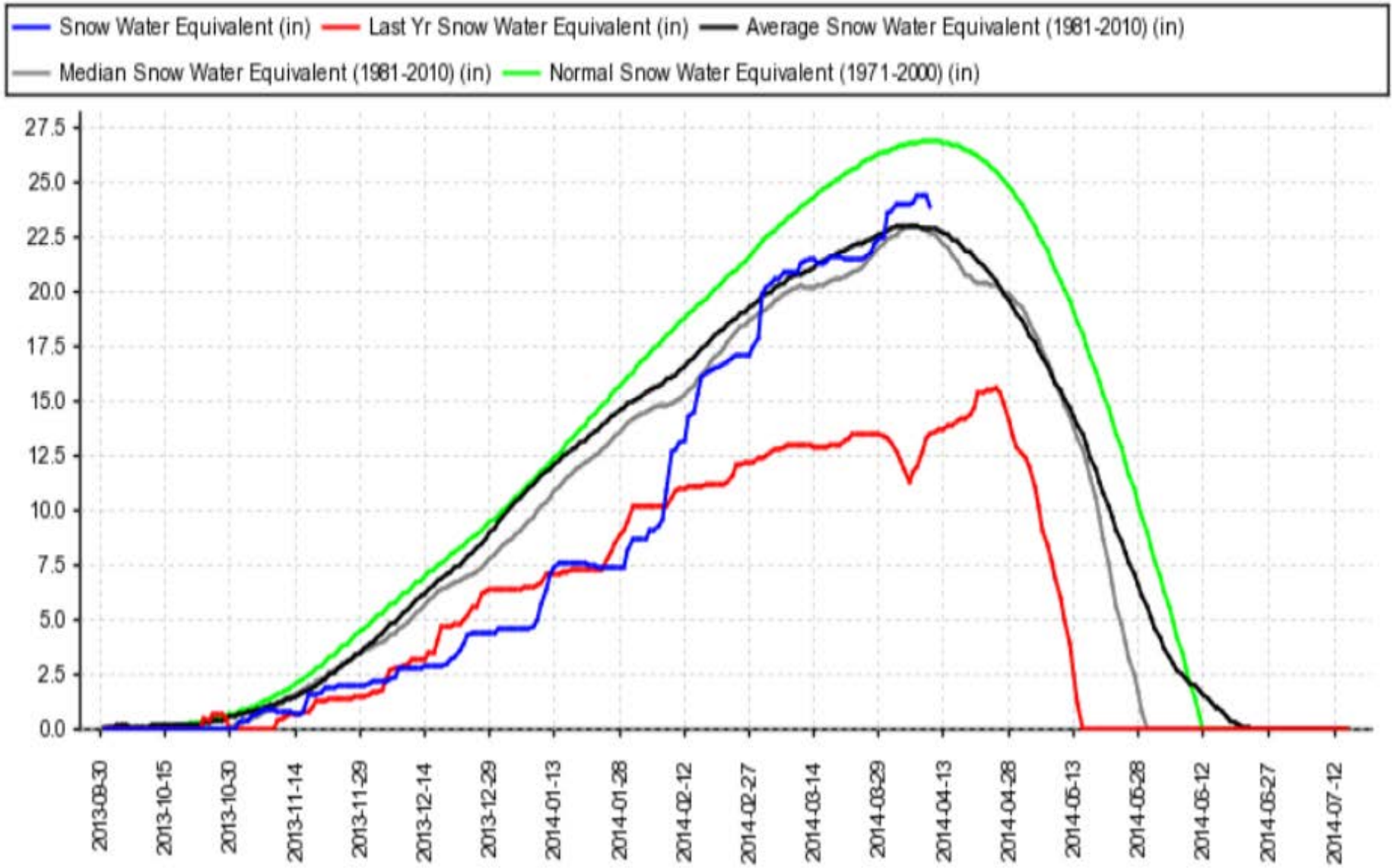
Rank	Year	Enso	Stream Flow Apr-Sep	Reservoir 31-Mar	Streamflow + Reservoir Sum	Non-Exceedance Probability	SWSI
1	1997	N	7009	949	7958	97%	3.9
2	2011	SL	6343	1493	7836	94%	3.7
3	1986	N	6054	962	7016	91%	3.4
4	1996	N	5584	1314	6898	88%	3.2
5	1982	N	5772	1064	6836	85%	2.9
2014 10% Chance Exceedance Forcast		N	5960	864	6824	84%	2.8
6	1983	SE	5008	1740	6748	82%	2.7
7	1984	N	5046	1654	6700	79%	2.5
2014 30% Chance Exceedance Forcast		N	5680	864	6544	78%	2.3
8	2009	N	4610	1759	6368	76%	2.2
2014 50% Chance Exceedance Forcast		N	5490	864	6354	75%	2.1
9	1999	SL	4947	1311	6258	74%	2.0
2014 70% Chance Exceedance Forcast		N	5300	864	6164	72%	1.8
10	1998	SE	4495	1632	6127	71%	1.7
2014 90% Chance Exceedance Forcast		N	5020	864	5884	69%	1.6
11	1995	SE	4442	1041	5483	68%	1.5
12	2006	N	4076	1264	5340	65%	1.2
13	2008	N	4286	989	5275	62%	1.0
14	2012	LN	3384	1780	5164	59%	0.7
15	2010	EN	3106	1880	4986	56%	0.5

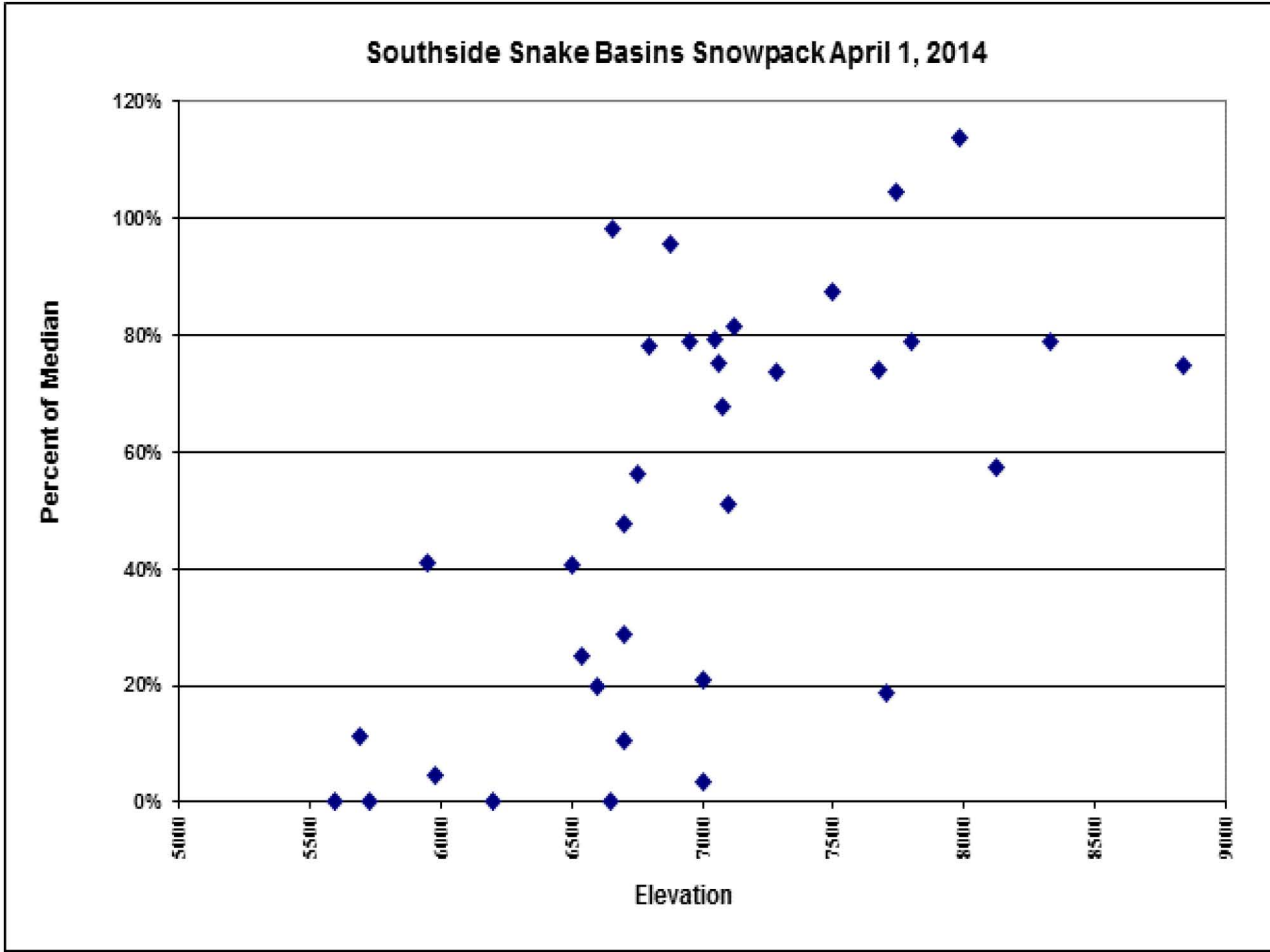
Surplus

Idaho Site - Emigrant Summit (471)

(As of: Thu Apr 10 15:27:12 PDT 2014)
Provisional data, subject to revision

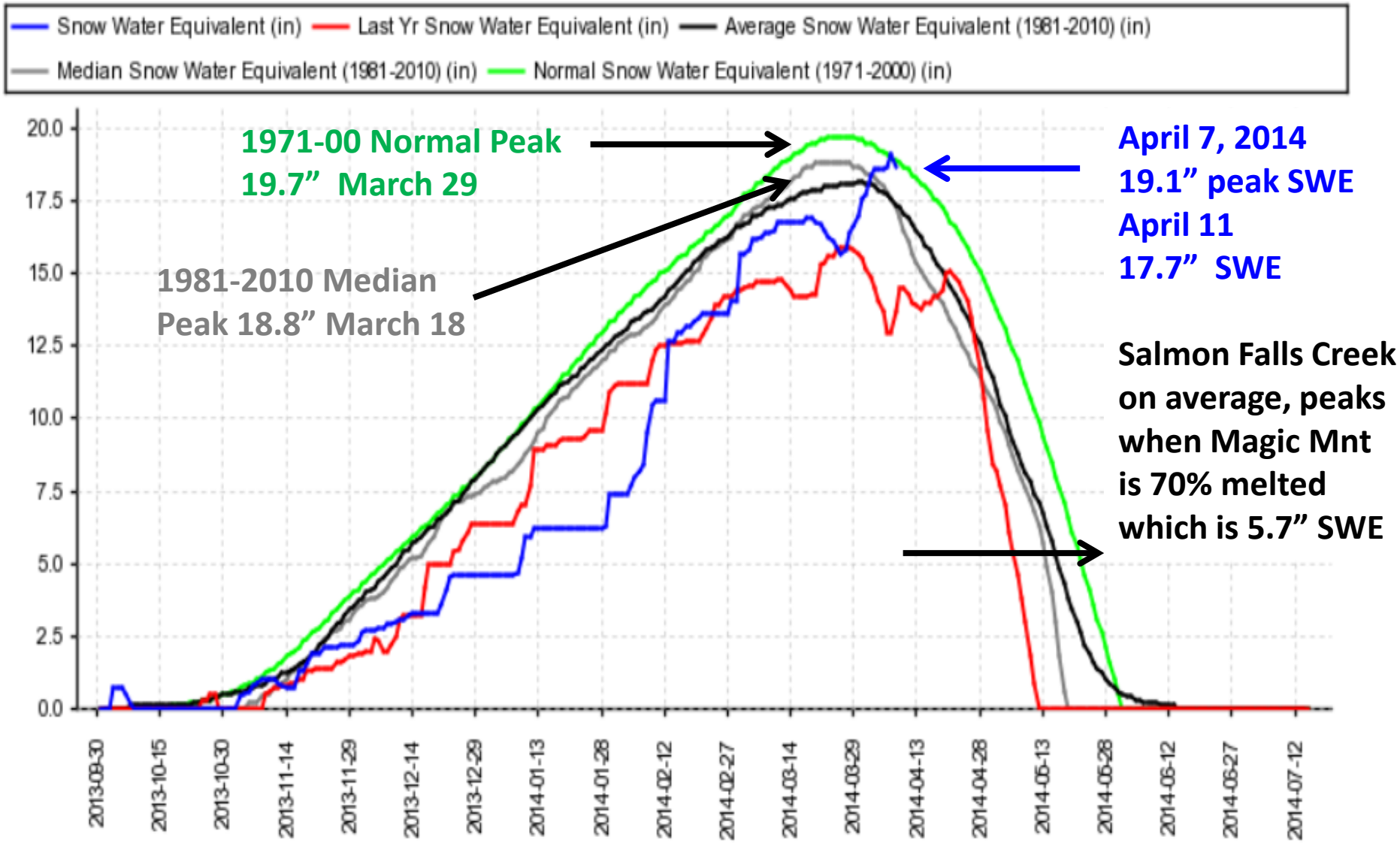
Bear River Snowpack in Idaho




Southside Snake Basins Snowpack April 1, 2014
120%
100%
80%
60%
40%
20%
0%
Percent of Median
5000
5500
6000
6500
7000
7500
8000
8500
9000
Elevation

Idaho Site - Magic Mountain (610)

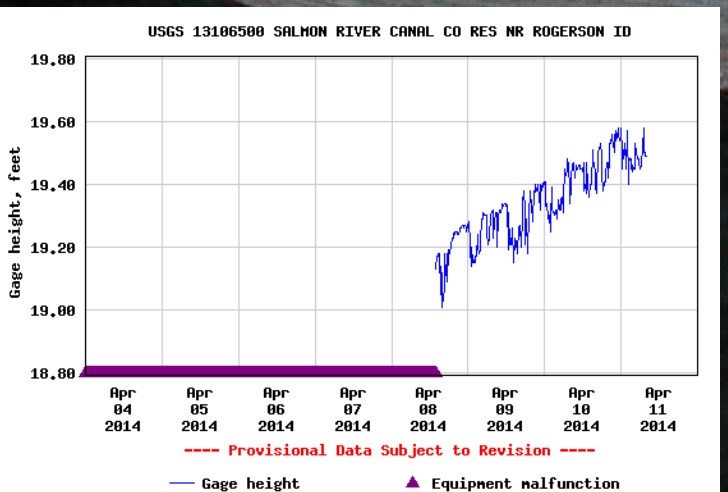
(As of: Tue Apr 08 09:47:48 PDT 2014)
Provisional data, subject to revision



TFSCD 59th Annual Water Supply Forecast Meeting for Salmon Falls Tract

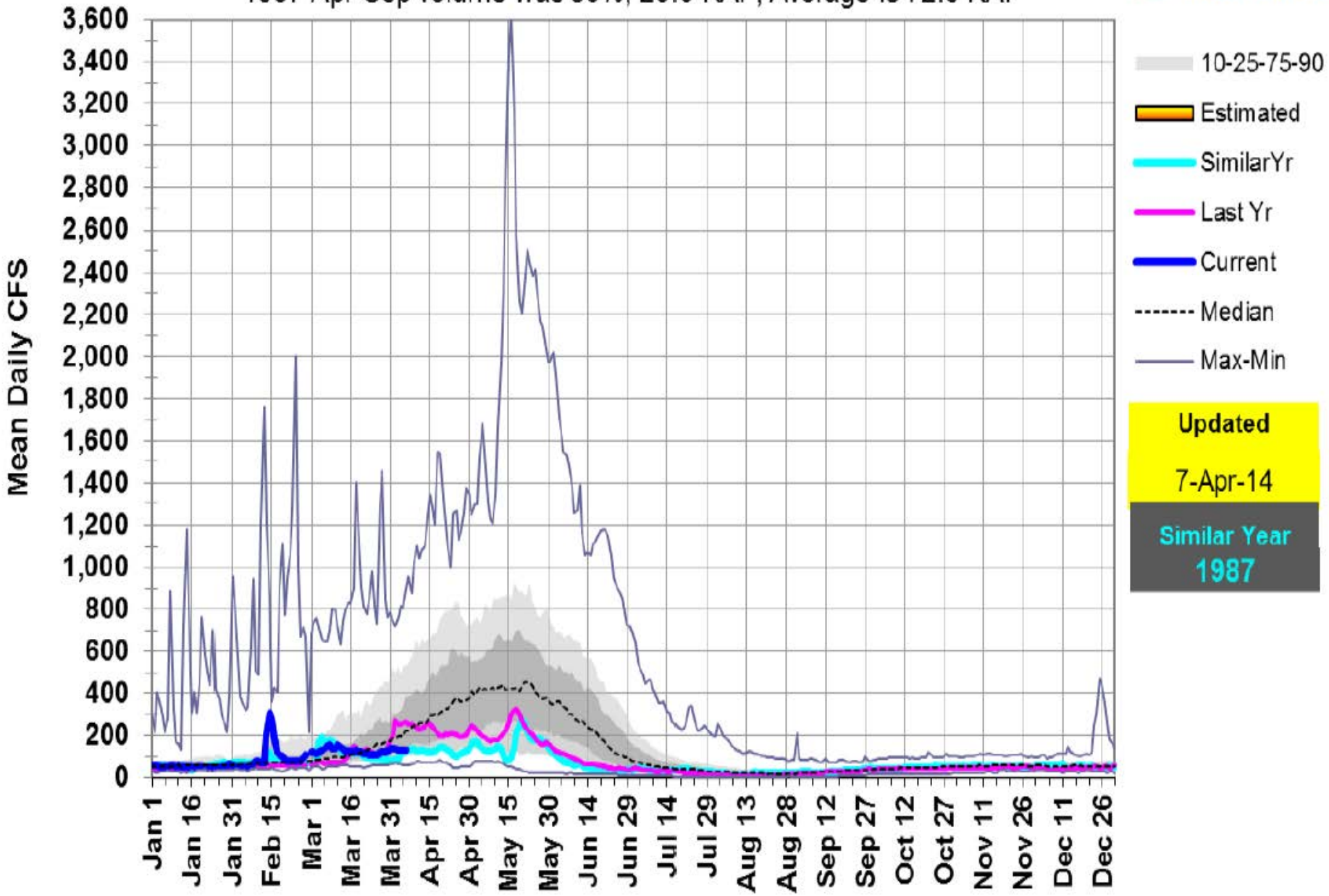
April 9, 2014

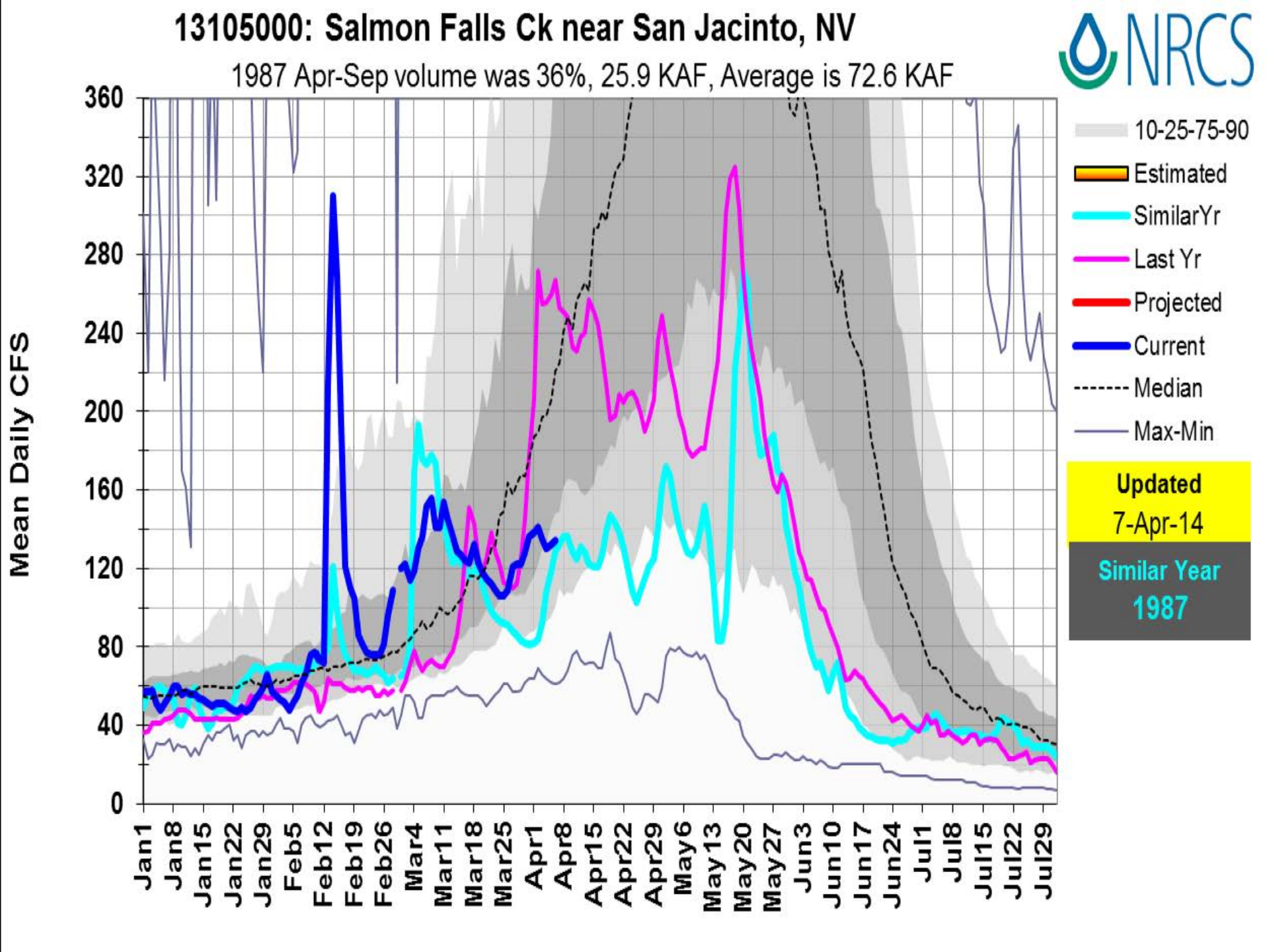
There is interest from Oakley users to automate reservoir gage, if can help

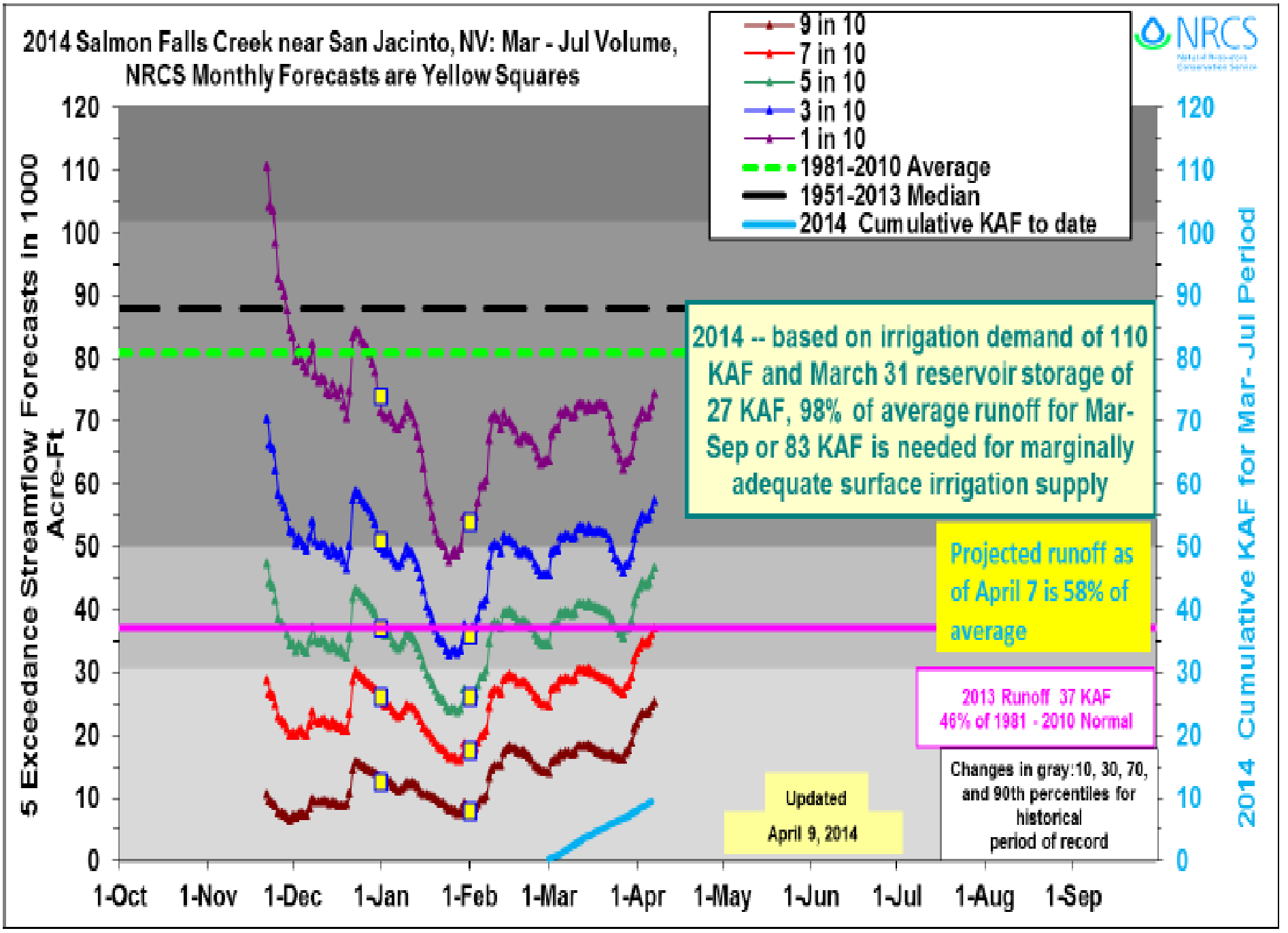


13105000: Salmon Falls Ck near San Jacinto, NV

1987 Apr-Sep volume was 36%, 25.9 KAF, Average is 72.6 KAF




13105000: Salmon Falls Ck near San Jacinto, NV
1987 Apr-Sep volume was 36%, 25.9 KAF, Average is 72.6 KAF
NRCS
Mean Daily CFS
360
320
280
240
200
160
120
80
40
0
Jan1
Jan8
Jan15
Jan22
Jan29
Feb5
Feb12
Feb19
Feb26
Mar4
Mar11
Mar18
Mar25
Apr1
Apr8
Apr15
Apr22
Apr29
May6
May13
May20
May27
Jun3
Jun10
Jun17
Jun24
Jul1
Jul8
Jul15
Jul22
Jul29
10-25-75-90
Estimated
SimilarYr
Last Yr
Projected
Current
Median
Max-Min
Updated
7-Apr-14
Similar Year
1987


2014 Salmon Falls Creek near San Jacinto, NV: Mar - Jul Volume,
NRCS Monthly Forecasts are Yellow Squares
NRCS
9 in 10
7 in 10
5 in 10
3 in 10
1 in 10
1981-2010 Average
1951-2013 Median
2014 Cumulative KAF to date
5 Exceedance Streamflow Forecasts in 1000 Acre-Ft
2014 Cumulative KAF for Mar- Jul Period
0
10
20
30
40
50
60
70
80
90
100
110
120
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
2014 -- based on irrigation demand of 110 KAF and March 31 reservoir storage of 27 KAF, 98% of average runoff for Mar-Sep or 83 KAF is needed for marginally adequate surface irrigation supply
Projected runoff as of April 7 is 58% of average
2013 Runoff 37 KAF
46% of 1981 - 2010 Normal
Updated
April 9, 2014
Changes in gray:10, 30, 70, and 90th percentiles for historical period of record

2013 runoff and review of forecast

	Exceedance level Forecasts				
April 1, 2013	90%	70%	50%	30%	10%
Apr-Sep forecasts	27	39	48	58	75 KAF

2013 runoff 35 KAF

Year	Apr 1 Snow inches	Apr-May Precip	Apr-Sep Runoff
1987	50.9	72%	26
2013	64.4	54%	35
2014	57.4	??%	??%

Salmon Falls Creek
April 1, 2014 Five Exceedance Streamflow Forecasts (KAF)

Apr-Sep					1981-2010 average	
90%	70%	50%	30%	10%		
17.5	27	35	44	58	74	KAF

Station: 14G01S, BOSTETTER R.S. SNOTEL
Station: 14G02S, MAGIC MOUNTAIN SNOTEL
Station: 15H01S, BEAR CREEK SNOTEL
Station: 15H14S, POLE CREEK R.S. SNOTEL

Twin Falls Soil & Water Conservation District
Salmon Falls Reservoir Storage Allotment

Updated April 2, 2014

Based on NRCS April 1 Streamflow Forecasts

Note: Allotment formula is based on March 31 reservoir storage and April 1 - September 30 forecasts.

		Chance of Exceedance Streamflow Forecasts				
		90%	70%	50%	30%	10%
Inflow Forecast, April 1-September 30, acre-feet		17500	27000	35000	44000	58000
Storage in Dam, March 31, acre-feet	27200	27200	27200	27200	27200	27200
Total Storage (Inflow Forecast + Storage)		44700	54200	62200	71200	85200
Less Dead Storage in Reservoir (5000 A-F)	5000	39700	49200	57200	66200	80200
Projected Reservoir Loss of 20%	0.20	7940	9840	11440	13240	16040
In Dam, Available for Delivery		31760	39360	45760	52960	64160
Projected Delivery Efficiency: 2010 56.0% 2009 59.8% 2008 55% 2007 59.4% 2006 65.3% 2005 59.4% 2013 __._%	0.53	16833	20861	24253	28069	34005
Less Water for Callen	485	485	485	485	485	485
Less Individual Storage Carryover	343	343	343	343	343	343
Water to be Delivered Over the Weir		16005	20033	23425	27241	33177
Divided by Total Shares	60050.65	0.267	0.334	0.390	0.454	0.552
Allotment if 'Individual Storage Carryover' is not subtracted from 'In Dam, Available for Delivery'		0.272	0.339	0.396	0.459	0.558

Average Allotment	
1924-2006	0.761
1971-2000	0.934
2002-2006	0.616
Full Allotment	1.167

2002 allotment 0.436 Runoff 56 KAF Apr-Sep
2012 allotment 0.685 Runoff 22 KAF Apr-Sep
2013 allotment 0.380 Runoff 35 KAF Apr-Sep

April 1, 2014 Water Supply - Amount Needed, Shortages & Surplus

Based on All Five Chance of Exceedance Forecasts

BASIN or REGION	Adequate Irrigation Water Supply (KAF)	March 31 Reservoir Storage (KAF)	Streamflow Volume Needed for Adequate Water Supply		90% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)		70% Chance Of Exceedance Streamflow Forecast Apr-Sep (KAF)		50% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)		30% Chance of Exceedance Streamflow Forecast Apr-Sep (KAF)		10% Chance Of Exceedance Streamflow Forecast Apr-Sep (KAF)		Percent of Adequate Supply Based on 50% Chance of Exceedance Streamflow Forecast
			KAF	% Avg	fcst	diff	fcst	diff	fcst	diff	fcst	diff	fcst	diff	
Salmon Falls	110	27	83	112%	18	-65	27	-56	35	-48	44	-39	58	-25	42%
Little Lost	40	NA	40	118%	13	-27	17	-23	21	-19	25	-15	32	-8	53%
Big Lost	180	32	148	99%	29	-119	63	-85	86	-62	109	-39	143	-5	58%
Big Wood	275	73	202	76%	37	-165	91	-111	127	-75	163	-39	215	13	63%
Oakley	50	22	28	108%	7	-21	15	-13	19	-9	24	-4	32	4	68%
Owyhee	450	170	280	69%	108	-172	156	-124	193	-87	235	-45	300	20	69%
Little Wood	60	19	41	49%	17	-24	30	-11	39	-2	48	7	61	20	95%
Boise	1500	645	855	63%	1000	145	1210	355	1300	445	1390	535	1600	745	152%
Snake (Heise)	4400	864	3536	94%	5000	1464	5280	1744	5470	1934	5660	2124	5940	2404	155%
Teton	85	NA	85	44%	205	120	245	160	270	185	300	215	345	260	318%
Bear River	400	711													

Adequate Supply − Reservoir Storage = Streamflow Needed

Water Supply Outlook Key:

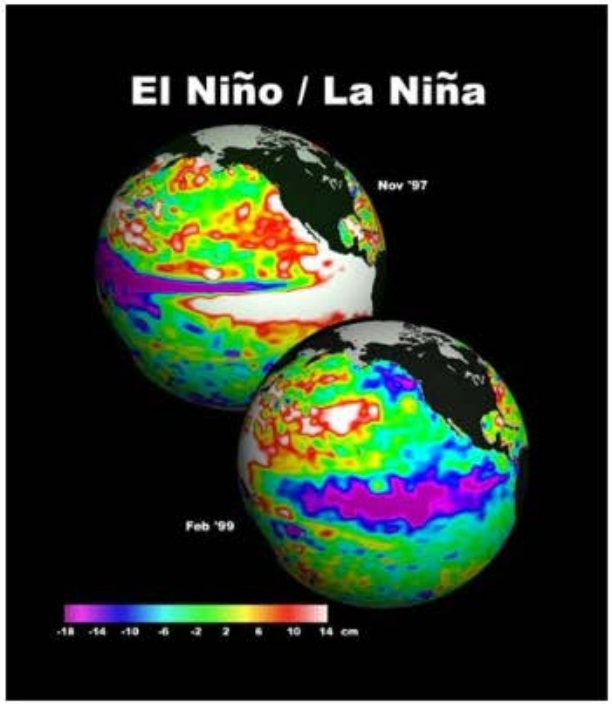
Shortages	Some Shortages	Marginal Supplies	Sufficient Supplies	Surplus

Lets look to the future, next season, 2015

Sunday, March 16, 2014

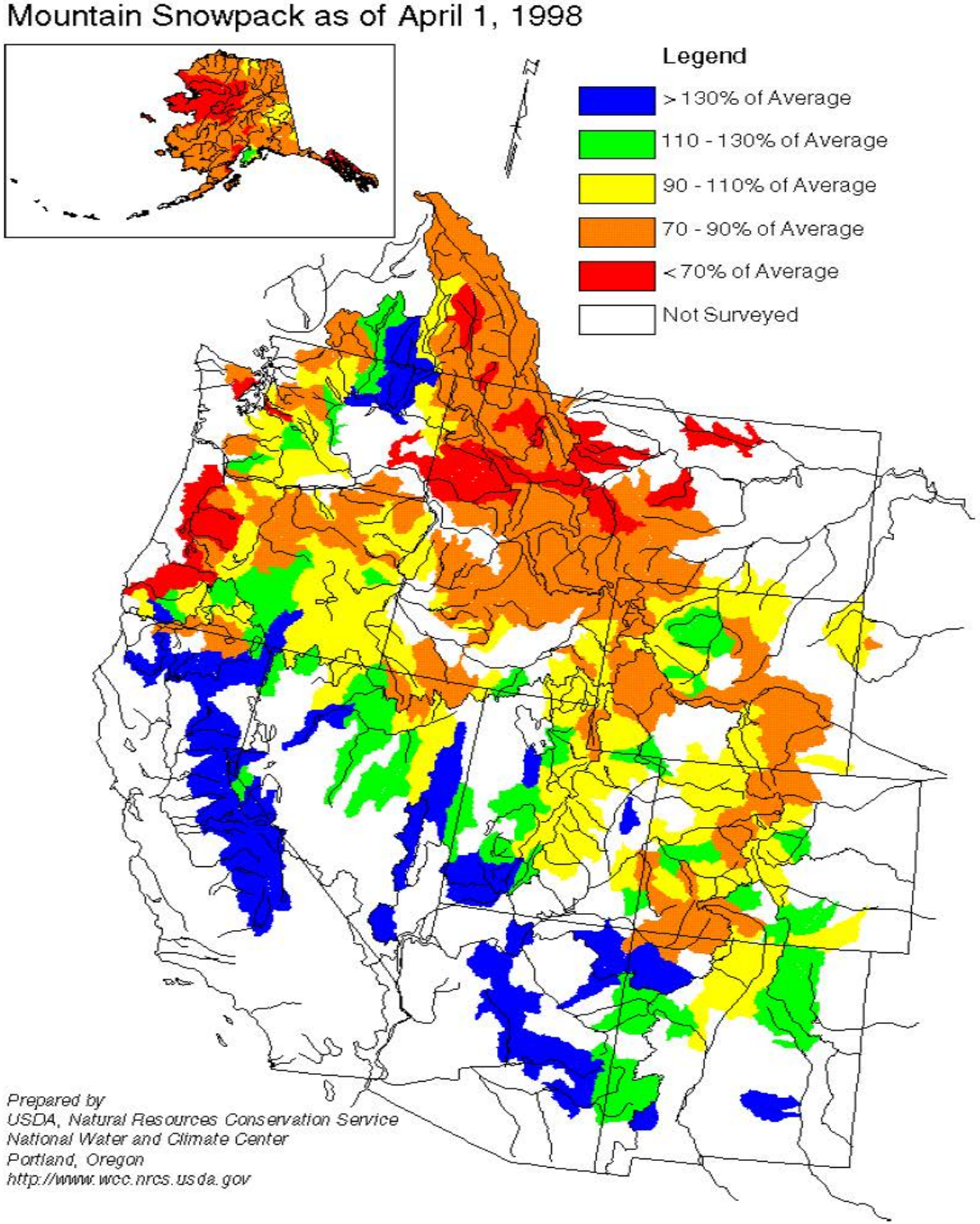
Could The Next 'Super El Niño' Be Forming?

Today, we'll be addressing the idea on if the next 'Super El Nino' could be forming in coming months. But first, let's revisit the concept of an El Nino.



The image above shows sea level anomalies associated with the El Nino phase of the El Nino-Southern Oscillation (ENSO) phenomenon, as well as the La Nina phase. As is shown, an El Nino sees substantially higher than normal sea levels in the eastern Equatorial Pacific, while a La Nina sees below normal sea level anomalies. In the same sense, an El Nino observes warmer than normal waters over those same areas, and a La Nina depicts colder than normal waters in the same blue and purple areas shown.

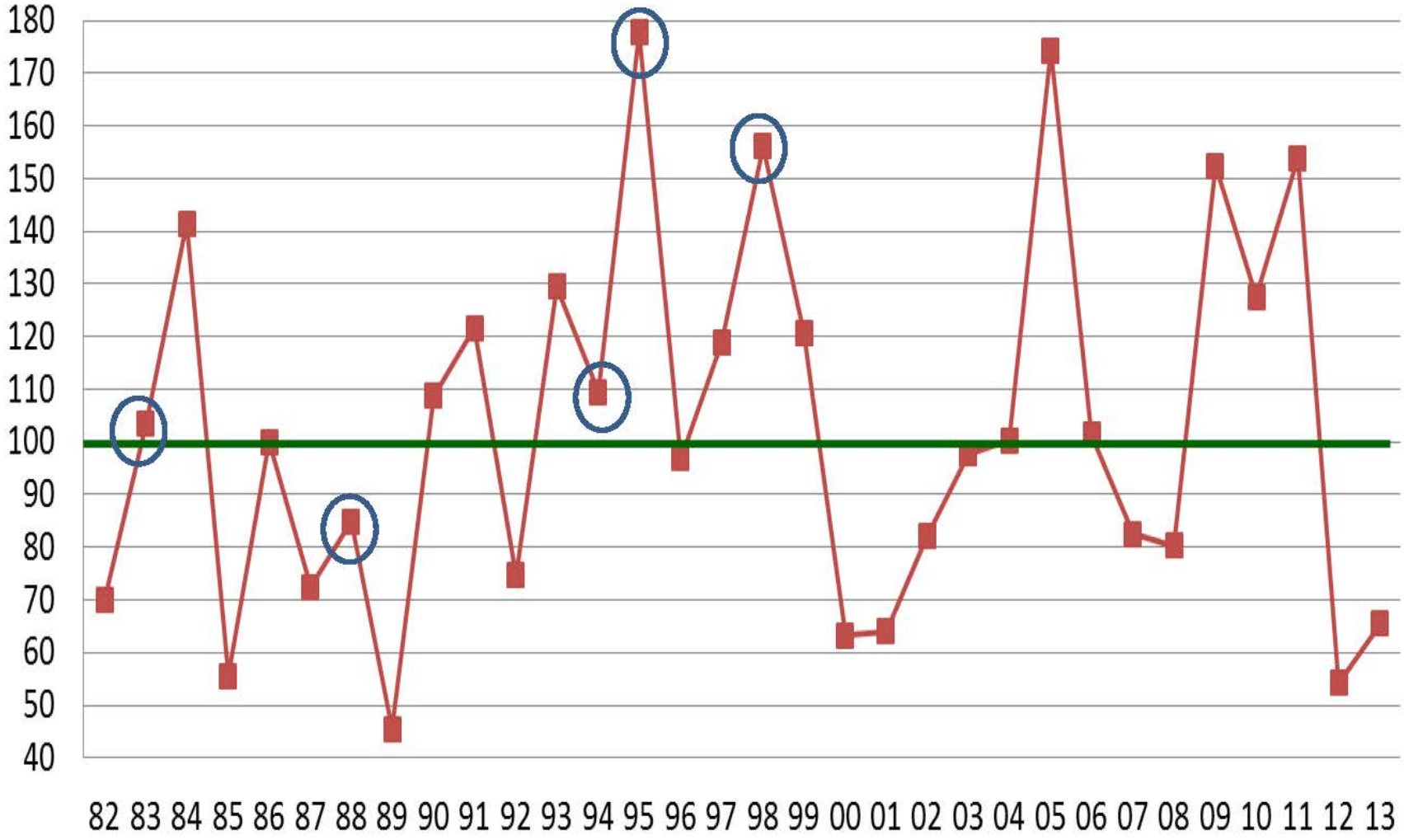
Now that we've established the ENSO phenomenon, let's move on to the original 'Super El Nino' of 1997.



Strong El Nino Years
Salmon Falls Runoff

Year	Apr-Sep Runoff
1998	102
1983	116
1995	100
1988	48
1994	27
2015	???

Salmon Falls Apr-Jun Precipitatin as % of 1981-2010 Average
Bostetter, Magic, Bear Creek & Pole Creek




DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE


SNO
BALL
BOISE, ID